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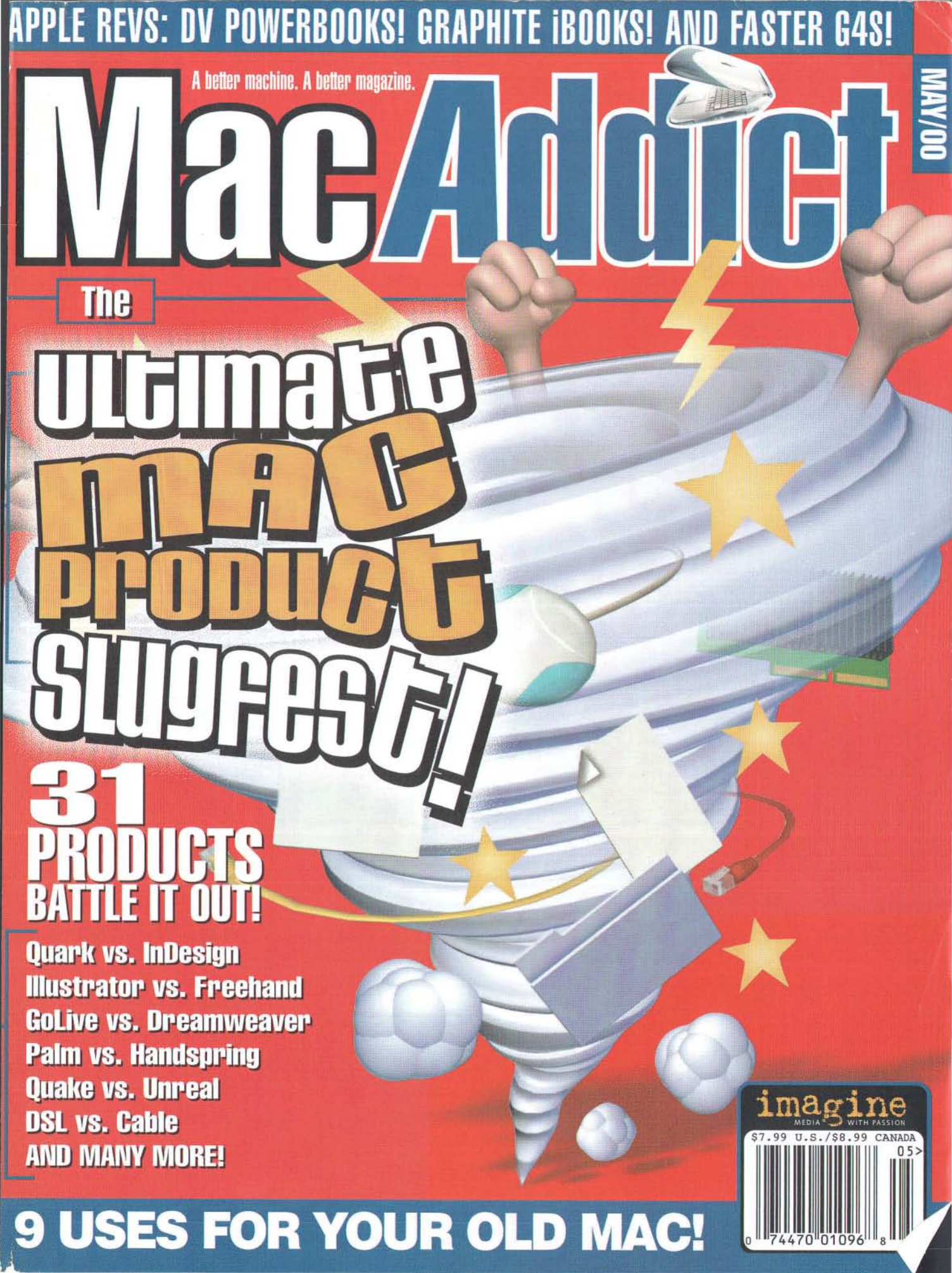

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DSL vs. Cable
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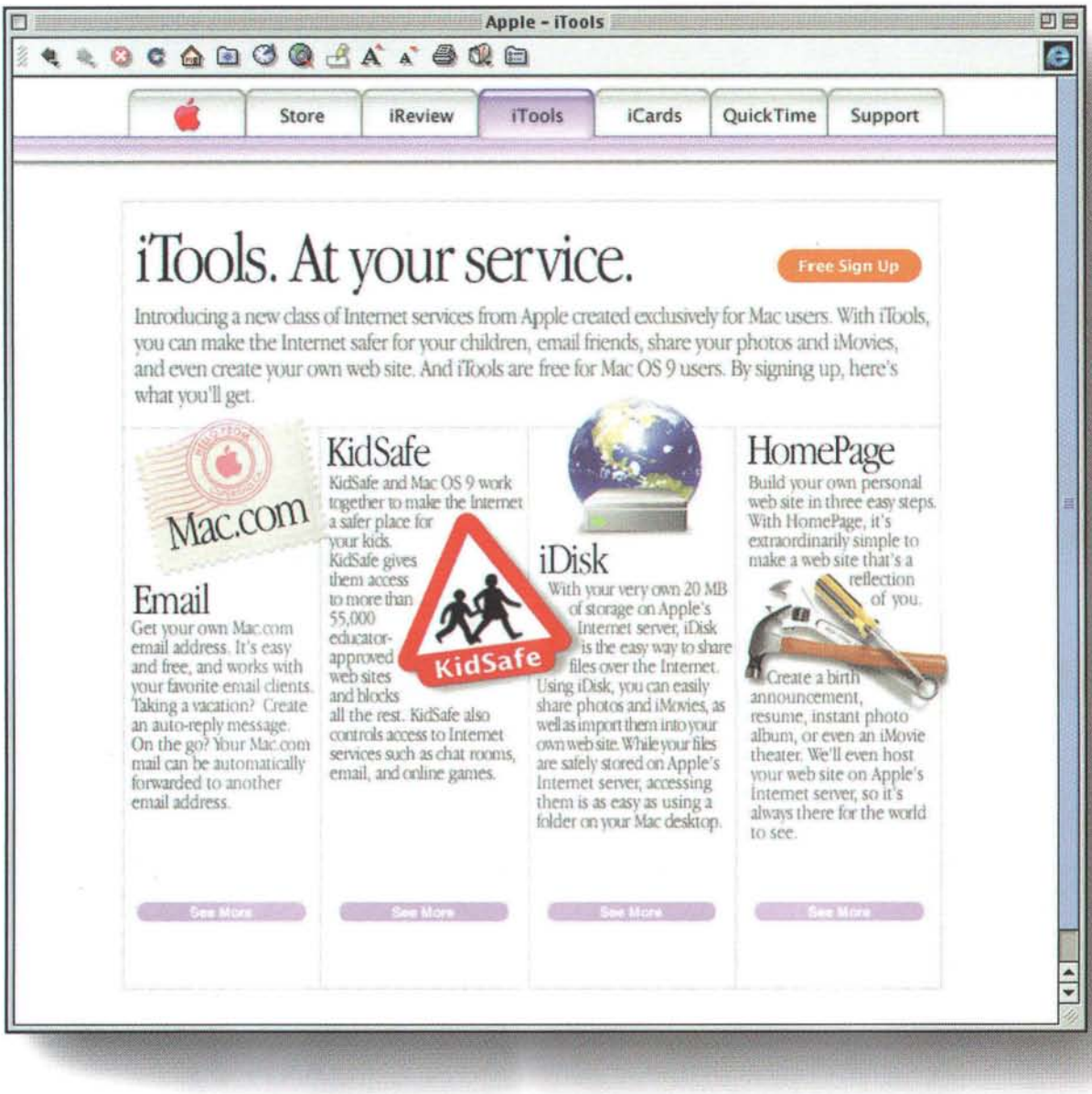

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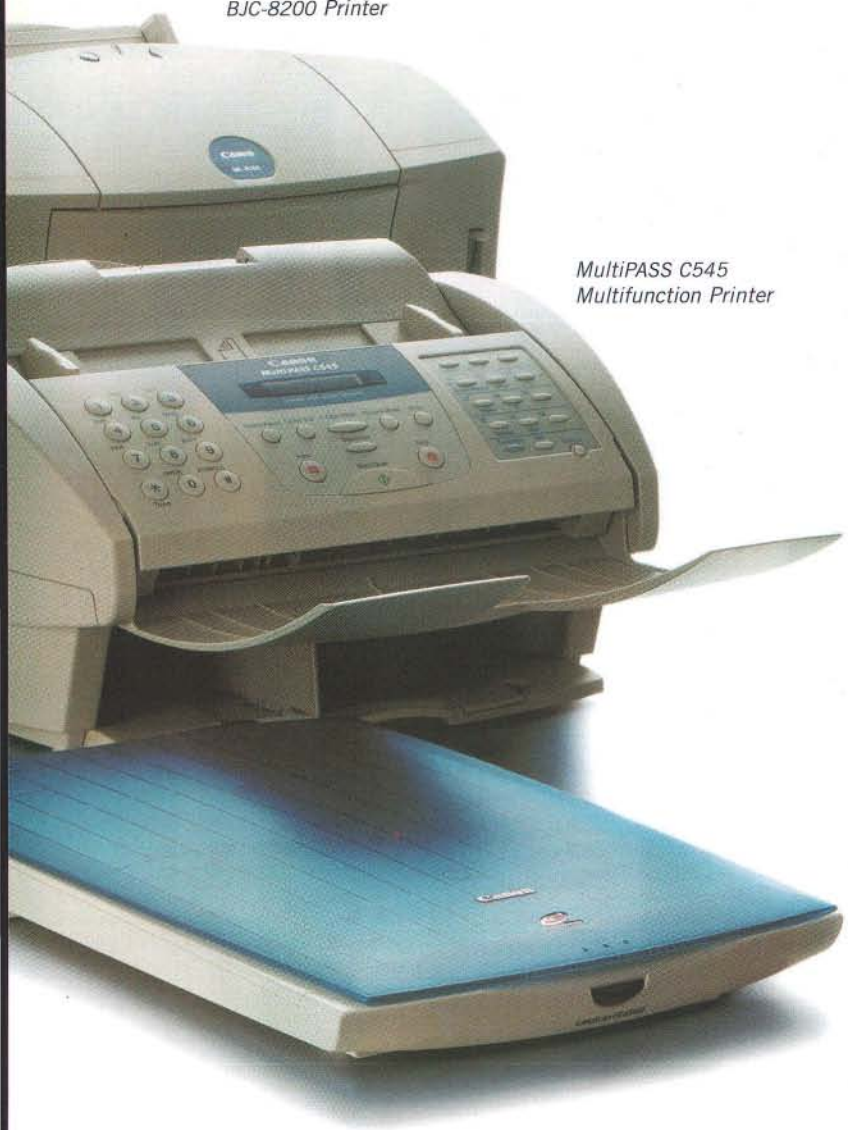

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WHEN GOOD DARTH MAULS go bad...

MAY 2000

MacAddict

45

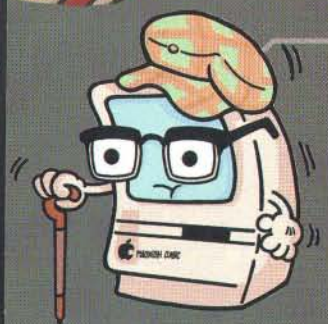
highlights

26 MacAddict Super Product Slugfest

We let 31 Mac products loose into the ring and watch them go at it. See if Dreamweaver can bring GoLive down, if Unreal can chokehold Quake, if Handspring can upend Palm, or if Final Cut Pro can whoop Premiere's ass. It ain't pretty, but hey, neither is the image of Stone Cold Steve Austin in bikini briefs. **EDITED BY CATHY LU**

40 Born-Again Mac

Didn't your mother ever tell you never to let anything go to waste? Well, ours did. So if you've relegated your old Mac to the dusty corners of your closet in favor of your gleaming new G4, start undigging. We're going to tell you how to make use of your obsolete Macs in ways you never ever dreamed of. **BY OWEN LINZMAYER**



ARN KIDS these days on't know the value of floppy disk.

how to

64 How to Batch Your Graphics with GraphicConverter 3.8

There's nothing more aggravating than a pile of dull, monotonous graphics work keeping you away from your gaming. We'll show you how to let GraphicConverter slice, dice, and compress your images for you so you can get back to fragging. **BY IAN SAMMIS**

68 How to Build an MP3 Player with REALbasic

Now that you've built your Shockwave game in three hours, made a Web site in 24, and generally learned to distrust our time estimates in development articles, here's a nifty little MP3 player that you can build in 20 or 30 seconds. **BY IAN SAMMIS**

AS SEEN ON TV, Al Capone's presto-change evidence tampering machine.

OLIVIER WOLFSON had to go into Tasmanian Devil mode to finish our cover image. (iBook cover photograph courtesy of Apple.)

ONE TURNTABLE AND NO MICROPHONE—music so hot you'd think it was playing in a toaster!

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Volume 5, Issue 5

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MY, MY, orange you organized.

every month

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Less "Mac", more "Addict."

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24 Scrapbook
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18 Get Info
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62 PowerPlay
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104 Shutdown
You'll laugh, you'll cry, you'll kiss $7.99 goodbye. Well, you'll do one of these, anyway.

MacAddict

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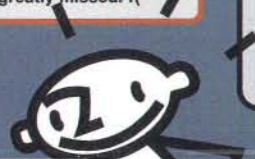
HEY, I USED TO KNOW that guy. He was funny.

The iBorg riseth...and falleth. Goodbye, Susan. Hello, Ben. Congratulations Don! Thanks for the help, Linda! You were a good man, Charles Schulz—you'll be greatly missed. :(



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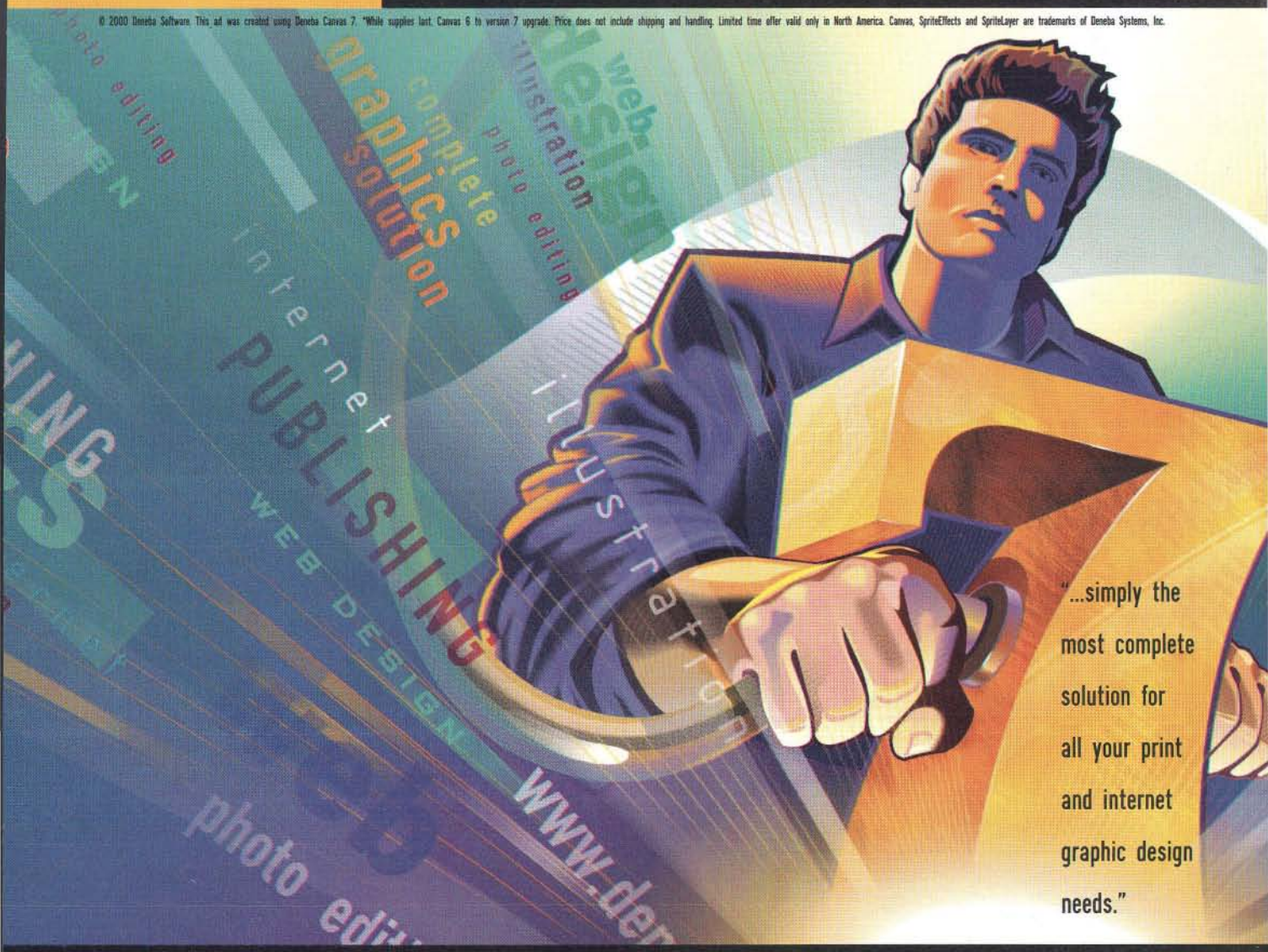

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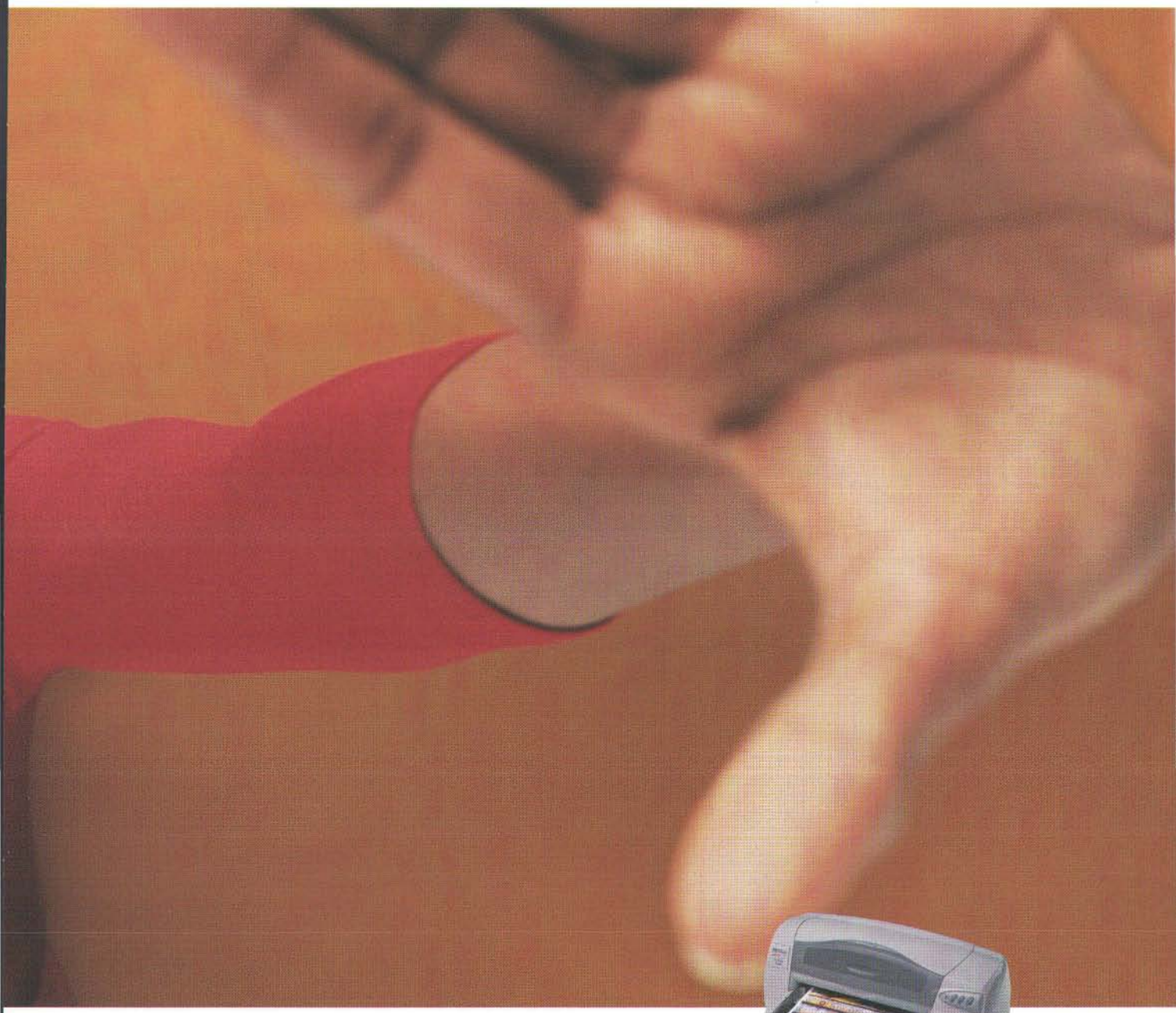

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the disc

CAN STEVE come out and play? We're sending the iBorg over to get him.

Mayday! Mayday! This month's Disc is dastardly dangerous!

highlights

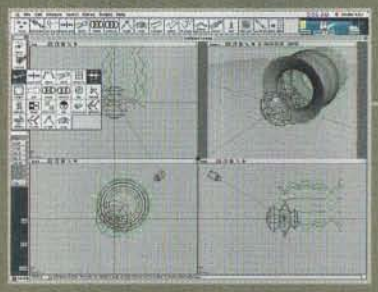
Alpha Centauri Demo

Hey, sci-fi fans, this otherworldly adventure game will have you boldly going where you hope no one has gone before. Rely on your instincts and exercise that muscle between your ears as you lead your squad in a fight against other mutinous factions and explore the vast 3D alien terrain. This turn-based strategy game begins in the middle of nowhere and will have you building bases, discovering technology, customizing your units, and conquering enemies to survive.

OW, MY EARS! Okay, it's back to singing in showers for you!

Spark 1.5 Demo

Grammys are up for grabs if ya want 'em, baby, but if the high cost of recording-studio time keeps that rock star dream confined to your morning shower, this program will put an end to that. Record, edit, process, and master your way to gold with this ultra-powerful audio package. And this new version offers something waaay cool to MOTU software users—access any VST plug-in right in your Digital Performer program.



PSSST, NASA...do ya want a new Mars Polar Lander? Send photos of the red planet and we'll Photoshop it in when we're finished. We won't tell!

PiXELS 3D Studio 3.5.1 Demo

Create a magical world where pigs fly, ducks have lips, and hell freezes over. If the real world is just too common for your taste buds, build your own surreal oddity with this 3D modeling and animation powerhouse. You'll find inverse kinematics, organic modeling tools, interactive decal and texture mapping, and much more to squish and pull your shapes across the x, y, and z planes. Build lifelike creations that rival the real deal, and bring them to life with animation.

Nanosaur Extreme 1.3.1

Eat, drink, and be merry—that's what the angry T-Rex throng will be singing as they rip you apart in this no-vegans-allowed munchfest. But much to their chagrin, you're a dino from the future, so you just strap on your spiffy jetpack and blast off to safety—for now. Collect dino eggs and search for time portals to preserve your dino ancestry before a gigantic asteroid swoops down and obliterates Earth. If you thought the original Nanosaur was wussy, you ain't seen nothing yet! This hyped-up version features five times as many enemies and weapons.

LET'S EAT HIS LIVER with some fava beans and a nice Chianti! Ft, ft, ft...

THE SAGA CONTINUES in this second installment of Narasu's iMovie extravaganza, *Not One Peep—Part II*. Nikki met an untimely fate at the hands of our own crazed reviews editor, but she's not the only *MacAddict* staff member who's suddenly missing. Get the scoop in this month's staff video. Plus take a first peek at the face behind MacAddict.com—Niko Coucouvanis.

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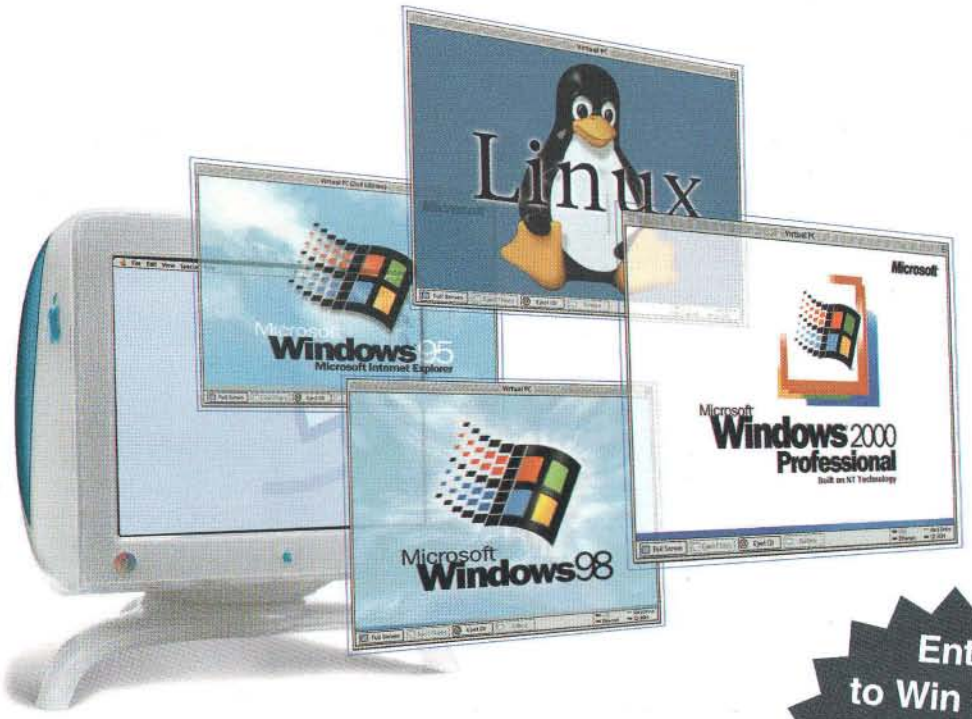

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editor's note

Now that this is done, I'm going back to playing Unreal.

GOT YOUR OWN LIST of favorite apps? Spell 'em out at http://www.macaddict.com/debate.

Everybody has their favorite applications. Sometimes apps are your favorites for political reasons, as in "ClarisWorks keeps my Mac free from Microsoft." Sometimes you like a program for its functionality—for example, "MacInTax saved me $500 last year." Sometimes you just like an app because it's so dang cool: "Look at my little stick man dance, thanks to Flash."

What exactly makes a great application is a tough bug to pin down. Some applications just seem to be designed really well—it's easy to find what you need, and they work intuitively. Others perform specific functions that no other app does just right. Some are simply legacy apps—everyone uses them, so you do, too.

GOATEES are so early 90s!

In the quest for just what makes a great application, I made two lists: one of completely functional programs I feel every Mac user should own and learn to use in order to get the most out of their machine, and the other of applications that, in my experience, are the coolest, most elegant, best-put-together pieces of software.

TOP 10 MUST-HAVE APPLICATIONS	TOP 10 COOLEST APPLICATIONS
1. Microsoft Word	1. Macromedia Flash
2. Adobe Photoshop	2. Adobe Photoshop
3. MicroMat TechTool Pro	3. Adobe Illustrator
4. FileMaker Pro	4. Apple Final Cut Pro
5. Bare Bones Software BBEdit	5. Steinberg Cubase VST
6. Apple QuickTime Pro	6. Adobe After Effects
7. Aladdin Systems StuffIt Deluxe	7. QuarkXPress
8. Casady & Greene SoundJam MP	8. Macromedia Dreamweaver
9. Intuit Quicken Deluxe	9. Real Software RealBasic
10. Microsoft Excel	10. Metrowerks Code Warrior

Only one product made both lists—Photoshop, which is not only powerful but also sets the standard for elegant interface design. It's relatively easy to figure out and use, yet it's so deep that very few people know all its secrets. Photoshop comes in wildly handy. You can correct color, optimize Web images, make digital art, fake photographs, and perform a thousand other tasks. It's also the most expensive application I would definitively say every Mac owner should buy. And you know what? Nobody—not a single person—at *MacAddict* disagrees with me on that point.

Great apps make an impact on the person using them.

Several other applications that almost made both lists suffered from one malady or another that kept them from making the cut. Examples include BBEdit, a highly useful tool with a very limited scope, and QuarkXPress, a revolutionary page layout app, but pricey and a bit esoteric. Other applications such as Word—a must-have, but bloated and clunky—clearly belong in one category, but didn't even approach the other. Great apps combine the qualities of tools you love to use and those you must have from a practical standpoint. Great applications make an impact on the person using them.—*RC*

Staff Rants

Part 10 in our series—and this time it's personal.

Dave Reynolds
Lunchy Executive Editor

Q. *What is your favorite Mac application?*

A. Probably Starcraft—at least that's where I've wasted the most time.

Q. *What is the worst Mac application you have ever used?*

A. It's a toss-up between Word 6 and an obscure QuarkXPress XTension that made a typesetter spew 63 feet of very expensive film at the newspaper I used to work for.

Cathy Lu
Features Editor, Ethics Advisor

Q. *What is your favorite Mac application?*

A. Photoshop. Anything that lets me manipulate pictures of my enemies, my ex-boyfriends, my boss (um, just kidding) is, as Martha Stewart says, a good thing.

Q. *What is the worst Mac application you have ever used?*

A. Microsoft Word 6 was pretty much the most unintuitive, annoying, useless, sucky program ever. Well, maybe not useless, since technically I used it every day—but whatever.

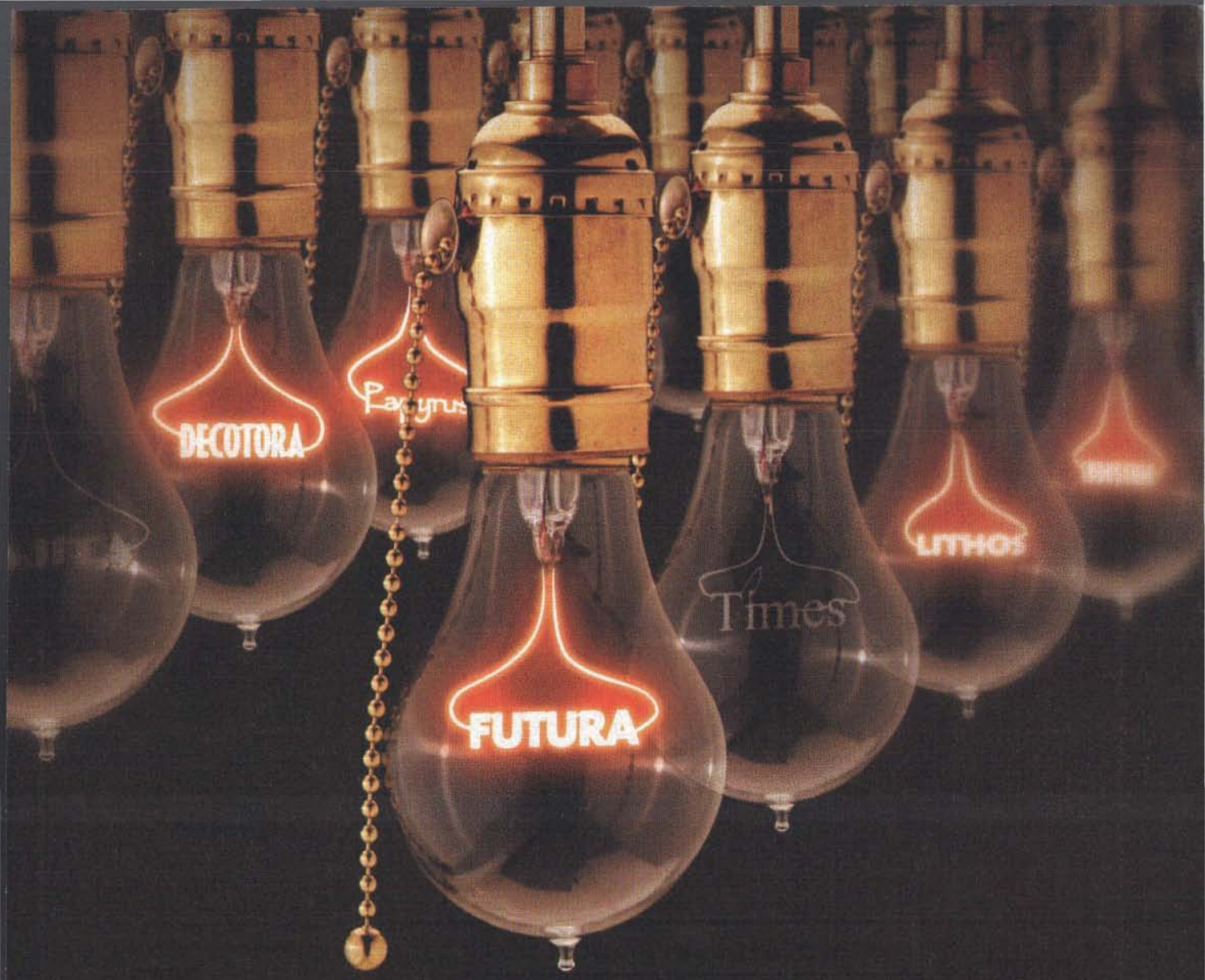
Jenmo
Rubber Ducky

Q. *What is your favorite Mac application?*

A. Word—*with* all of David Reynold's suggested fixes, and *only* with those fixes. A blank page inspires writer's block, which presents a good excuse to buy a Twix.

Q. *What is the worst Mac application you have ever used?*

A. Acrobat. An evil manager made me learn the program and format a CD interface with it in five days...in the snow...uphill both ways.



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letters

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TALK TO US and other Mac addicts at http://www.macaddict.com/debate.

You Got the Geeky Part Right

This message is for David Reynolds. I once knew a David Reynolds who lived on Florie Street in Anaheim. His mom's name was Zella. Are you that same red-haired geeky little kid?—Jodi Spangler

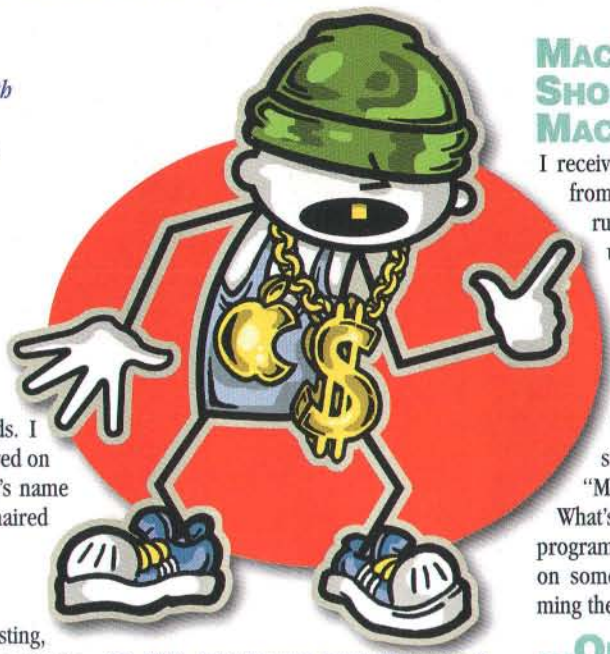
Ice, Ice, Baby

The interview with Ice-T was interesting, to say the least. I now have "The pimp's losin' the ho" as an alert sound. Such high-quality journalism is hard to come by these days. Thanks for the breath of fresh air. —Matt Smith

RECENTLY SIGHTED

I read your series about Mac aquariums with interest, as I took up the hobby myself last summer and built a tank out of an old 512K Mac. Recently, I bought a couple of iMac shells on eBay, and now I have my very own iMacaquarium. You can see more at http://www.macmagician.com.—Tony Gordon

IT TAKES GUTS to do this to your Mac...oh, wait...



OK, MAX...take the soup bowl off your head. Let's get you sobered up.

I've been a loyal subscriber to *MacAddict* ever since I picked up the premier issue at the newsstand, and I love what you guys do. You made an interesting choice to interview Ice-T, and for the most part it was really good. But I was troubled by your decision to allow Ice-T to plug his porno, drugs, and guns Web site directly. While I'm sure you edited out a lot, it seems like poor judgment to include this stuff. It puts your magazine in a very poor light, particularly since the interviewer laughed at the plug, as if it was no big deal for anyone of any age to hear or to visit the site.

I still appreciate the innovative approach *MacAddict* has had since the first issue, including your attempt to interview folks like Ice-T. I hope in the future you use better judgment in determining what is necessary and relevant to your readership in article content.—John Trauscht

Usually I don't waste my time with the staff video, but I decided to check out the interview. It was better than almost any staff video. Keep it up—I'd like to see more of that in the future.—Silvio Cerase

Mac Is Really Short for MacDaddy

I received an old Macintosh Color Classic from a friend some time back. It was running System 7.0, so I decided to upgrade to 7.5.3, which helpfully appeared on The Disc a while ago. Well, I finally transferred all the stuff over to the Mac and began installation. About 20 minutes later, I checked on it. What I saw was rather amusing. Below the status bar appeared these words: "Making your Macintosh happy." What's going on here? Was the installation program carrying my Mac to bed and putting on some soothing Barry White while dimming the lights?—Patrick Johnson-Whitty

...Or Was That 24 Days?

After visiting a buddy's Web page, I read "Zero to Hero in 24 Hours" (Feb/00, p26) by David "Mad Dog" Reynolds. I embarked on my own project using a scanner, PageMill, Photoshop, Canvas, and GraphicConverter (from The Disc). Three days later, after a six-hour upload (I found out with Fetch that HTML strictly forbids several keystrokes in the titles of some of my files), I had a Web page. I also had a deep concern about Reynolds' meds and an intense desire to throttle the man.

However, now that the caffeine has worn off, I see that if it hadn't been for Dave's deluded concept of time and my blind faith, I wouldn't be a member of the growing World Wide Web. Thanks, guys, for the best computer-zine for freaks, by freaks.—Larry Pausback

D'Oh

Thanks to your article "Hardware Hack from Hell" (*Get Info*, Feb/00, p23), I avoided making the same mistake as your executive editor Dave Reynolds. The door on the back of my PowerBook G3 also jammed, or at least it wouldn't close correctly, and I too was tempted

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to open the case to fix it. Your article helped me find a better way.

With a small flashlight, I took a close look at each end of the door. I noticed two small wires, which I guessed were the springs that hold the door shut—one placed at the top, *outside* the arm that extends from the door to the case interior, and the other positioned at the bottom, *inside* the arm.

Since the resistance to closing the door came from the side with the bottom wire, I figured that one must be the culprit. I used the eye of a large sewing needle to hold the spring and moved the wire over the top of the arm to the outside. The spring snapped back to its original place and the door now closes normally. *MacAddict* comes through again.—Hank Lavagnini

Tangerine Seats?

Notice that the Honda slogan is "Thinking" and the Dodge slogan is "Different." What's next? Translucent cars?—Kent Smith

They Forgot to Patent 0s and 1s, Too

In what will someday be known as the business oversight of all time, Amazon neglected to patent the use of the database as a means of storing information about products and users, even though it did patent the way of *accessing* said information. Please notify everyone that I will be patenting the use of the database to store any and all information, and anyone using or planning to use a database to store information from this point forward will face long and painful lawsuits.—Charles Kali

Pillaged

Just thought you might enjoy the sports addicts we have at our school. I am a Green Bay Packer fan, and I literally begged for any flavor of iMac except Viking purple. This is what they gave me to undermine my Green Bay decor!—Jeanie

MAYBE THEY can get to the Super Bowl now.

Don't Forget Fuzzy Dice

This picture is of a Macintosh II that I custom-painted for a final art project in high school last spring. I used some spray paint for the red base coat and brushed on the flames with acrylic. Then I gave the whole thing a final coat of clear enamel to make it really shiny. To complete it, I added a Chevy emblem, just because Chevy is the best. I have christened it MuscleMac—because it looks like a hot-rod muscle car. It needs a drive train and a windshield before I can get it going.—Sam Bowerman

THAT MAC IS FLAMING... uh, we mean on fire!

Maid to Order

Just a little piece of Mac evangelism I whipped up...a silly play on words. Thanks for making a great magazine like *MacAddict*.—Terry "Jägermeister" Nowicki

HE MAID IT himself.

Eidos Said the Same Thing About Lara!

While reading the Tomb Raider III review (Feb/00, p49), I was dismayed to see Frank O'Connor's comparison of Lara Croft to Weird Al Yankovic. O'Connor wrote that Weird Al "refuses to change with the times" and is "trapped forever in a haze of eighties zaniness." This is completely untrue. The reason why Weird Al is still around and popular today is because he *does* change with the pop music scene. His parodies are timely, up-to-date, and downright hilarious. He has lasted much longer than most of the groups he has parodied in the past, and it is because of his current and dynamic style.—Jon Ophoff

Honda? What About Max?

After seeing the Apple motorcycle in the March issue, I thought I'd send you a picture of my own Apple vehicle. I hope Honda doesn't get too mad.—D. Frakes

THE NEXT "Lawsuit of the Month."

You Know You're a Mac Addict When...

....you enjoy endless hours of Unreal Tournament fun by calling your character Bill Gates and then continually blowing yourself up with the Rocket Launcher and Redeemer.—Cole DiDonato

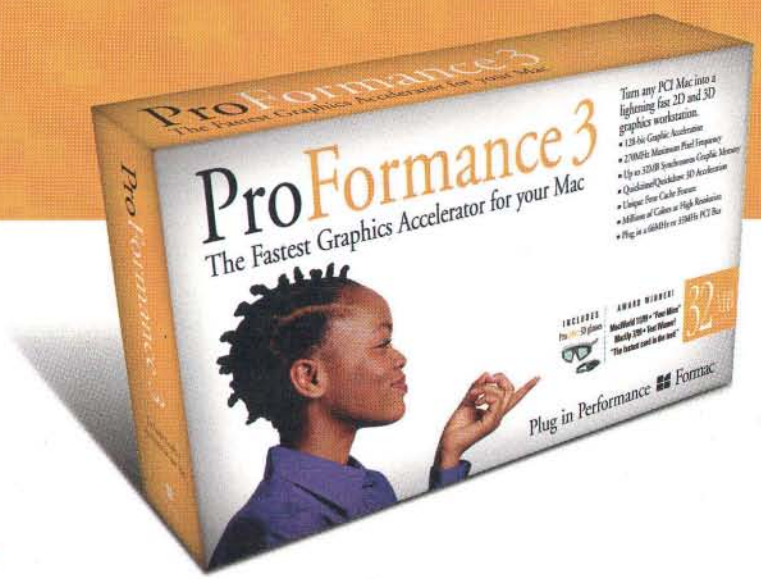
...your Mac costs more than your car is worth.—Jimmie Grillo

...you get your *MacAddict* renewal notice and try to click the OK graphic on the outside with your finger.—Phillip Comer

...you hear someone utter the phrase FatLoserBunny and you laugh with them, not at them.—Dave Schaefer

...you want to put a Mac 128K beside your G4 and run benchmarks just to see how the technology has improved.—David Bensimon

Think Better!



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"Photoshop acceleration was especially impressive."
MacWorld 11/99

AMAZING!
"Delivers Killer Performance!"
MacAddict 11/99

BEST VALUE!
"Best Value Graphics Card on the Market."
MacUser 8/99

IT'S THE FASTEST!
"Fastest Photoshop Performance!"
XLR8YOURMAC 10/99

The fastest graphics accelerator for your Mac just got better.

ProFormance 3 performed nearly twice as fast as its nearest competitor in tests run by major magazines worldwide. But that's only one of the many reasons why it has become the first choice for Web, graphics, and multimedia professionals. The long list includes: OpenGL compatibility; true 3D with the ProCyber 3D virtual reality glasses; better digital output connectivity - with your choice of VESA or SGI Flat Panel Display standards, or SVideo Out. And much more! So why wait? Find out how to get your Mac to think better, just visit www.formac.com and learn how easy it can be.

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New Macs, new apps, and new addictions.

Road Show

Jobs unveils revved Macs at Tokyo Expo

If a friend in need is a friend indeed, Japan has certainly been Apple's friend. Even in its darkest hours, Apple could always count on this easternmost of markets to continue buying Macs in quantities almost unimaginable elsewhere. On February 16, 2000, Apple rewarded the Macophilic Japanese with the first product announcements the company has ever made on foreign shores.

While the Macworld Expo Tokyo announcements had a sweeping scope, the details were more modest. Recently, Apple has tended to focus announcements on a single product family. This time only the iMac series remained the same: Apple modified every portable computer it sells, while the G4s edged back to their original speeds.

It's a bit odd that the most immediately obvious of the upgrades is perhaps the least significant. The iBook now joins its desktop counterpart in offering a graphite Special Edition for $200 more. In the iBook's case, though, you don't get any extra memory or hard drive space over the base version. Instead, you get a slightly faster processor—the iBook SE sports a 366MHz, compared to the 300MHz in the traditional iBook. The entire iBook line has had some of its weakest features upgraded, though: Apple has bumped the paltry 32MB of RAM and the 3GB hard drives that shipped with the original iBooks to 64MB and 6GB, respectively.

DEFINITELY NOT A PURSE. Don't even think it.

ILLUSTRATION BY DAVID "PIG-PEN" ROSS

The New Lineup

Figuring out exactly how Apple changes its hardware lineup can get confusing. Here's what has happened to the three lines Apple tinkered with most recently.

The iBook

WHAT'S CHANGED?	WHAT WAS IT?	WHAT IS IT NOW?
HARD DRIVE	3GB	6GB
RAM	32MB	64MB
CPU SPEEDS	300MHz	300MHz, 366MHz*
FLAVORS	Tangerine or Blueberry	Same, plus Graphite*

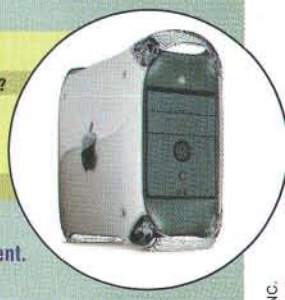
* Special Edition only.

APPLE MADE VERY FEW CHANGES to the iBook series besides the sleek new graphite color of the Special Edition.

The G4

WHAT'S CHANGED?	WHAT WAS IT?	WHAT IS IT NOW?
CPU SPEEDS	350MHz, 400MHz, or 450MHz	400MHz, 450MHz, or 500MHz
NON-DVD MODELS?	Yes	No

THE G4 HAS finally released the speeds Apple announced six months ago—feel the excitement.



The PowerBook G3

WHAT'S CHANGED?	WHAT WAS IT?	WHAT IS IT NOW?
CPU SPEEDS	333MHz or 400MHz	400MHz or 500MHz
GRAPHICS CHIP	Rage Mobility Pro	Rage Mobility 128
FAST EXTERNAL BUS	SCSI	FireWire (two ports)
NON-DVD MODELS?	Yes	No
AIRPORT?	No	Yes (with a $99 add-on card)

DON'T LET THE familiar package fool you—Apple has totally reworked the PowerBook on the inside.

PHOTOGRAPHS COURTESY OF APPLE, INC.

The up-again, down-again G4 line is up again. In a blast from the recent past, the G4 series once again provides processor speeds between 400MHz and 500MHz, at the same prices announced last fall. This time, though, the slower machines don't lumber along with the aptly named Yikes motherboard—Apple now bases the entire line on the technically superior motherboard it originally provided only in its faster machines. This time, we hope, Motorola will be able to keep the chips flowing fast enough to avoid another embarrassing delivery stall like last fall's. (IBM hasn't yet joined the G4 game, although it plans to get into the action this coming fall.)

Apple reserved its biggest changes for the now-venerable PowerBook G3 (if you've been hoping for a PowerBook G4, keep hoping—there's still no official sign of Velocity-enabled notebooks). Confusingly, the case design and name remain essentially unchanged for the fourth design of the PowerBook G3 (Apple's representatives now suggest naming the machines by years, like cars—which would make this the 2000 model). The changes under the hood are a bit more profound. As always, Apple has pumped up the chips—the fastest PowerBooks now run at 500MHz, while even the slowest machines now run at last year's peak speed of 400MHz.

NO, WE DIDN'T get our colors wrong—the iBook has gone graphite!

PHOTOGRAPH COURTESY OF APPLE, INC.

More remarkably, the PowerBook G3s now offer the Rage Mobility 128 graphics chip—a slightly slower portable version of the 3D speedster that delivers 2D and 3D graphics sensationally fast on the Power Mac G4s. The once ubiquitous SCSI port has finally disappeared altogether from Apple's lineup—the 2000 PowerBooks replace it with a pair of FireWire ports. As with the older PowerBooks, you can make the new machine appear as a hard drive on your main Mac (this time it's a FireWire drive), so it's extremely easy to copy data from or to the machine.

At least with respect to the professional machines, DVD's day has finally arrived—you cannot buy a Power Mac or PowerBook that doesn't come with at least a DVD-ROM drive. The consumer lines are still holdouts, however, so we'll resist making yet another optimistic declaration that DVD is here at last.

Where does all this leave Mac users? While we haven't had time yet to fully test our preview models (look for reviews next month), the modifications to the new PowerBooks appear to restore the line to its rightful place as the crown jewel of Apple's lineup. The return of the 500MHz Power Mac G4 is welcome (if somewhat overdue), although the absence of any meaningful speed increase at the top of the G4 line over a six-month period leaves us feeling a tad edgy (returning to the starting point hardly counts!). The iBook changes appear to indicate the start of a series of refinements we hope will eventually do away with its weak points—it took the iMac five redesigns and more than a year to reach its current level of elegance. Still, it's hard to find too much to complain about—Apple's Airport-wielding, gumdrop-and-graphite-flavored lineup is its strongest in years.—*IS*

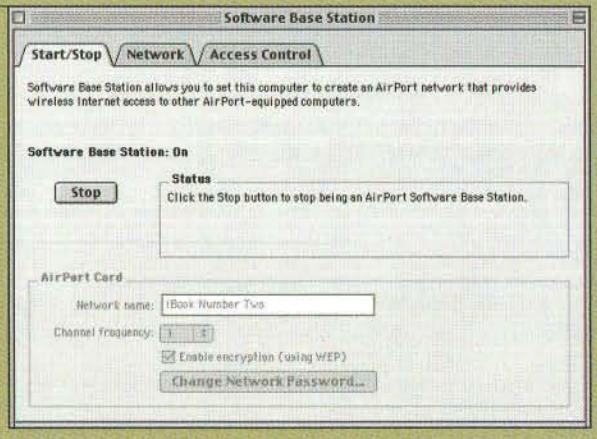
Base Stations Go Soft

Apple's AirPort 1.1 update offers new options

Unless you're a frequent flier on the Mac OS 9 Software Update feature, you might have missed the quiet rollout of AirPort 1.1, Apple's first update to its wireless networking system. If you've got an AirPort-capable system and you didn't get the update, grab it now—it includes a preview of a phenomenally useful little piece of software. Called Software Base Station, it enables an Internet-connected Mac with an AirPort card to serve the same function as a saucer-shaped AirPort base station.

To act as a software base station, a computer must have an Internet connection through another source, be it Ethernet, dial-up, or some alternative. The Mac must stay on and connected at all times—if it's located in your bedroom, you'll *really* start to appreciate the new iMac's fanless design. Set up networking (AppleTalk and TCP/IP) to use the non-AirPort connection, then install AirPort 1.1. After installation, a new AirPort Setup Assistant runs. Just tell it that you want to use your machine as a Software Base Station, and you've got an Internet gateway for your entire house, dorm, or secret underground lair.

Be careful of a few potential trouble spots, though. While you can use iBooks or the new PowerBook as a base station, Apple warns that the constant broadcasting required will suck batteries dry in a small fraction of their usual long lives. Moreover, this is still a preview feature, so bugs may emerge after we go to press. Still, this very cool feature makes AirPort a usable device for the vast majority of home users who would rather not buy an extra $299 device just to link one or two machines.—*IS*



WITH SOFTWARE BASE STATION TURNED ON, you can avoid the $299 expense for a base station.

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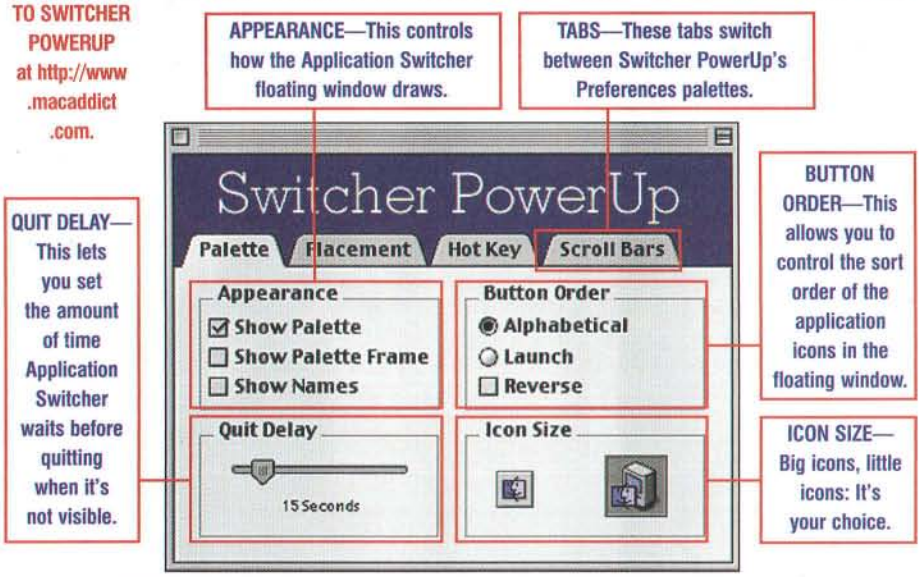
Shareware Pick of the Month

Switcher PowerUp

PRICE: Free
URL: http://skyscraper.fortunecity.com/binary/951/swpu.html

Made with RealBasic, Switcher PowerUp is a simple (and useful) way to configure the floating Application Switcher window Apple introduced in Mac OS 8.5. With just a few clicks, you can fully configure the Application Switcher window to behave a bit like the Application Dock in Mac OS X. You can also use Switcher PowerUp to configure the scroll bars, and it even lets you change the key combination that switches between applications.—*DR*

FIND A LINK TO SWITCHER POWERUP at http://www.macaddict.com.



LAWSUIT OF THE MONTH

Sony Versus Connectix: Injunction Lifted, New Suit Filed

After nearly a year of litigation, the way-cool PlayStation emulator for the Mac, Virtual Game Station, is once again available for purchase. In a ruling delivered February 10, the Ninth Circuit Court of Appeals overturned an injunction filed by a lower court that prevented Connectix (http://www.connectix.com) from sending new copies of VGS into the channel. The court rejected Sony's claim that Connectix violated copyright laws when it copied Sony's Playstation BIOS internally while creating VGS, ruling that these copies were "protected fair use."

Sony evidently had planned for this contingency—four days later, it filed a new lawsuit, claiming that VGS violates 11 Sony patents. Sony requested that the same judge who granted the earlier request for an injunction preside over the new trial. Connectix CEO Roy McDonald made the standard "we believe these allegations are baseless and totally without merit" statement, apparently obligatory in these circumstances.

Prospects seem bright for VGS, though—copies of the program still in the channel since the original imposition of the injunction last summer sold well enough to earn VGS the number 2 spot on PC Data's list of the ten best-selling Macintosh entertainment titles in January this year. Just to be on the safe side, however, we'd recommend buying as soon as you can—if *Lawsuit of the Month* has taught us anything, it's that you never know what'll happen.—*IS*

New for the Mac

ShortStack 74GB FireWire RAID

APS
http://www.apstech.com, $1,395

We've finally met our dream RAID: the ShortStack 74GB FireWire RAID from APS. For the low cost of $1,395, you get two FireWire drives you can easily stripe together into a level 0 RAID with the included software. The ShortStack even comes with FireWire cables. Best of all, the device is available *right now*.

Palm IIIc

3Com
http://www.palm.com, $449

Palm enthusiasts, rejoice—color has come to the Palm platform with the Palm IIIc organizer. Besides adding a color active-matrix TFT display, the Palm IIIc features 8MB of memory, cradle charging, and the new Palm OS 3.5 software. Gosh—it's beautiful, and it's available now.

YES, IT'S A PALM. Yes, it's in color. Yes, we want one too.

PHOTOGRAPH BY AARON LAUER

Freeway 3.0

SoftPress
http://www.softpress.com, $299

New features pack the third version of this hot Web page editor (which neither Adobe nor Macromedia owns)—better performance, multiple language support, AppleScript support, a built-in JavaScript interpreter (including a Java rollover editor), and the ability to import Illustrator and Photoshop files. Freeway 3.0 will be available in late March.—*DR*

Do You Have an Email Addiction?

Take Our Ten-Question Quiz to See!

Email addicts are everywhere, and they're pretty easy to spot. Their glassy eyes stare at Excel spreadsheets, but their twitching pinkies and pointer fingers hover nervously over Command-M on the keyboard. They check their email two, five, even ten times an hour when they think no one's looking. Like smokers, confront an email addict and they'll most likely admit their dependency—laughing and dismissing their habit as a harmless inevitability of today's information deluge. Inevitable? Yes. Harmless? We're not so sure.

As a public service to our readers, we took a quiz for alcoholism from AA's Web site (http://www.alcoholics-anonymous.org), updated it to pertain to this latest sin, and added a few questions of our own. If you answer *yes* to at least one of these vague, loaded questions, you *may be* an email addict and should start searching the Web for your 12-step options.—*NR*

1. Do you check email to relax or procrastinate?
2. Do you send emotional, impulsive emails when you get mad at other people, then desperately wish there was an Undo command for Send?
3. Do you experience depression when no one's emailed you for an hour?
4. Are your grades slipping? Are you goofing off on the job?
5. Did you ever try to stop checking email, and fail?
6. Have you begun to check email in the morning before school or work?
7. Like Ally McBeal, do you daydream about an orchestrated medley of the "You Have Mail" chime-only to realize you've been singing it out loud?
8. Do you experience a trance state in which you've checked your email without realizing you've done so?
9. Do you lie about the number of times you check email?
10. Do you become surly when you get chain emails that promise bad luck if you don't pass them to ten of your friends?
11. Do you experience withdrawal when you have to attend full-day, offsite meetings with no Internet connection?
12. Do you think it's cool to have multiple free email accounts?

Port Authority

Make VST your Port Authority for all things Macintosh. USB or FireWire®, VST's got the products that meet your computing demands.

USB products range from the Floppy Drive with color kit and the palm sized Hard Drives to the portable CD-R/W Drive and the versatile Tri-Media Reader.

For FireWire ports, VST's FireWire products are the perfect fit. From the popular ultra-slim Hard Drives and Zip250 Drives to the new FireWire RAID Array, storing and transferring your files is a breeze.

USB and FireWire ports, now on the new PowerBook G3, give users the best of both worlds. And with the added convenience of an expansion bay, VST's expansion bay storage devices and power accessories, built with your productivity and portability in mind, gives new meaning to the phrase "take it outside."

So whichever connection you prefer, make VST your Port Authority. Visit **www.vsttech.com** to learn more about these and other VST products.

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www.vsttech.com

works with a G3 & G4

works with iMac DV

FireWire

Mac

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Boston Graphic Smackdown

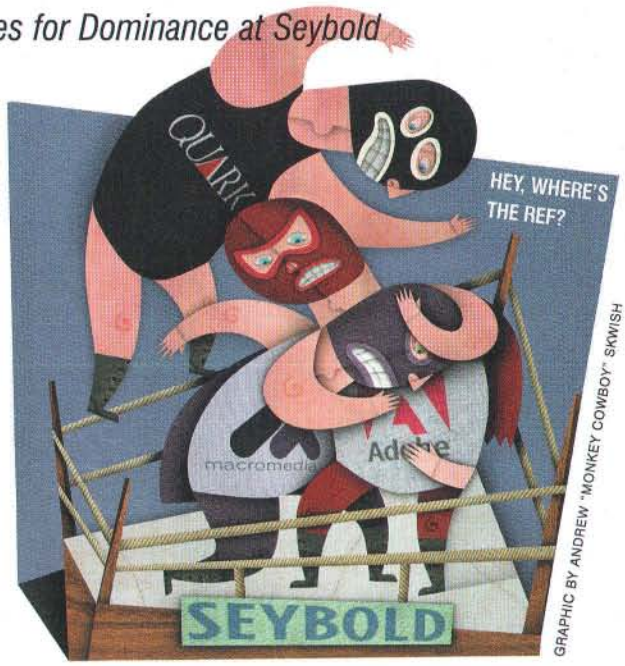
A New Wave of Graphics Applications Struggles for Dominance at Seybold

The twice-annual Seybold conference, the largest gathering of digital publishers, is traditionally a key expo for Apple (Apple used last fall's conference to introduce the PowerMac G4). This time, though, Apple steered clear of Seybold, leaving us afraid that a Seybold without Apple would be a strange, lonely sort of affair.

Fortunately, the company's departure didn't deprive the show of all its drama. A host of new graphics applications from some of the biggest names in the business made appearances—some publicly shown in the booths, others demonstrated quietly behind closed doors.

The biggest clash came at the keynote, where Macromedia, Quark, and Adobe all tried to capture the publishing industry. Macromedia made the first stab at Seybold glory, showing off version 9 of Freehand, which it plans to release in mid-March. The new Freehand brings the illustration program into Macromedia's Web line: Version 9 can export images in Flash format and can even create simple Flash animations. With these changes, Macromedia is staking Flash's claim as the preeminent vector graphics format on the Web.

Adobe, instead of contesting Flash's prowess, appears to be trying to hijack the format. With its new LiveMotion product, Adobe has created what looks like Flash with an Adobe-style interface—the program actually uses Flash as a default file format. Adobe also ran through demonstrations of a variety of other programs with the ubiquitous (and overused) prefix *in*. InProduction, slated for spring 2000, attempts to provide the infrastructure to transform the PDF format from a strictly onscreen format to a viable option for print publishers. InCopy (availability unknown), based on the InDesign engine, aims to enable editors to work with textual components of InDesign documents without worrying about inaccurate line and page breaks. In later briefings, Adobe showed us the first major upgrade to InDesign itself, which appears to fix a number of problems we mentioned in our analysis of the 1.0 version (*Reviews*, Dec/99, p62). It supports text along curves and both striped and dashed rules, and offers vastly improved alignment controls—while improving response times considerably.



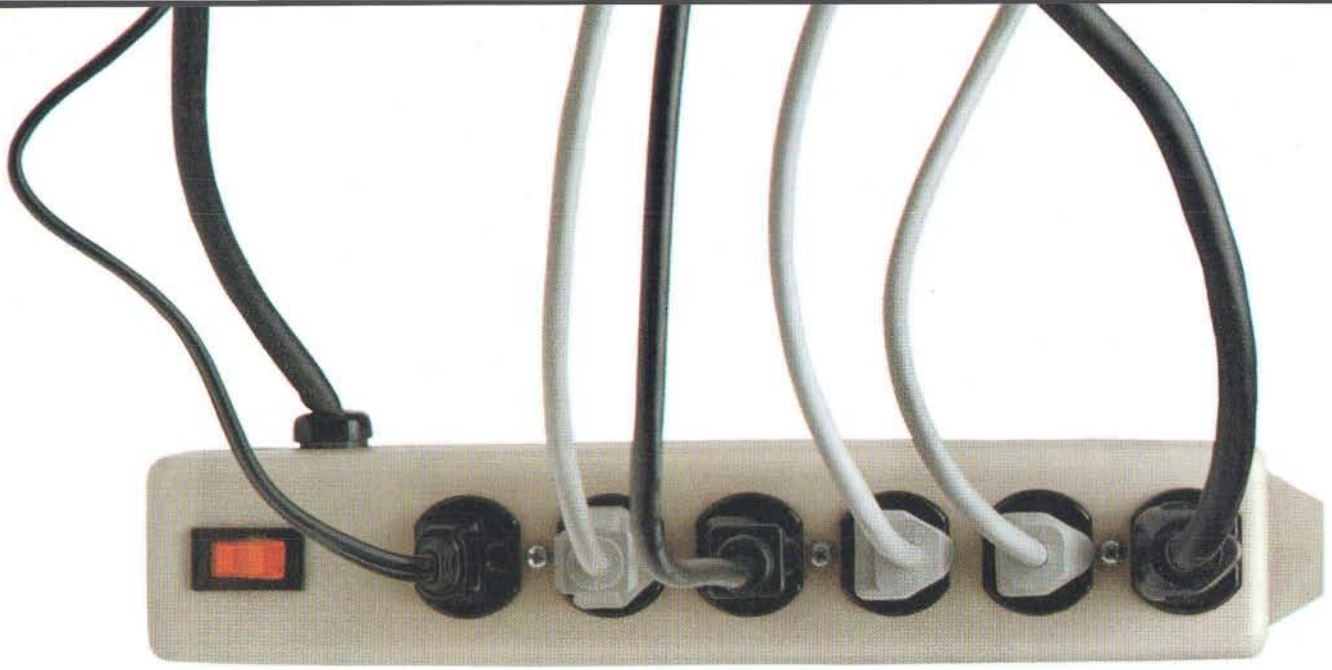
GRAPHIC BY ANDREW "MONKEY COWBOY" SKWISH

Quark tried to outdo competitors with a presentation on its upcoming QuarkXPress 5, designed to take a shot at the vast Web-design market. Flinging buzzwords with wild abandon, Quark announced its plans to use XML-based technologies to provide a flexible solution for media-independent publishing (in English, this means Quark 5 can quickly produce both print materials and Web sites based on information stored in an XML database). To clarify its singularly unenlightening description of the new QuarkXPress (slated for the fourth quarter this year), Quark proceeded to give the audience M&Ms as part of a bizarre metaphor that also included a pixie stick. Needless to say, we had to conclude this wasn't Quark's finest hour (although we appreciated the candy).—*IS*

The Smaller Players

While the major players struggled for dominance in Seybold keynotes, a host of smaller vendors tried to attract attention with new wares. Here's a partial rundown.

Company	Product	Description
A Lowly Apprentice Production (http://www.alap.com)	ImagePort	XTension that lets QuarkXPress import Photoshop files directly
A Lowly Apprentice Production (http://www.alap.com)	ShadowCaster for InDesign	InDesign version of drop shadow XTension
Synthetik Software (http://www.synthetik.com)	Studio Artist 1.1	New version of the too-cool-to-believe graphics synthesizer
Bitstream (http://www.bitstream.com)	WebFont Maker	Nifty utility that generates Web-viewable versions of fonts
Extensis (http://www.extensis.com)	Portfolio 5.0	New version of the asset-management software adds a host of new features, including multiple-catalog searches (slated for April)



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Give 'em the works—it's the sixth helping, after all.

AppleWorks 6

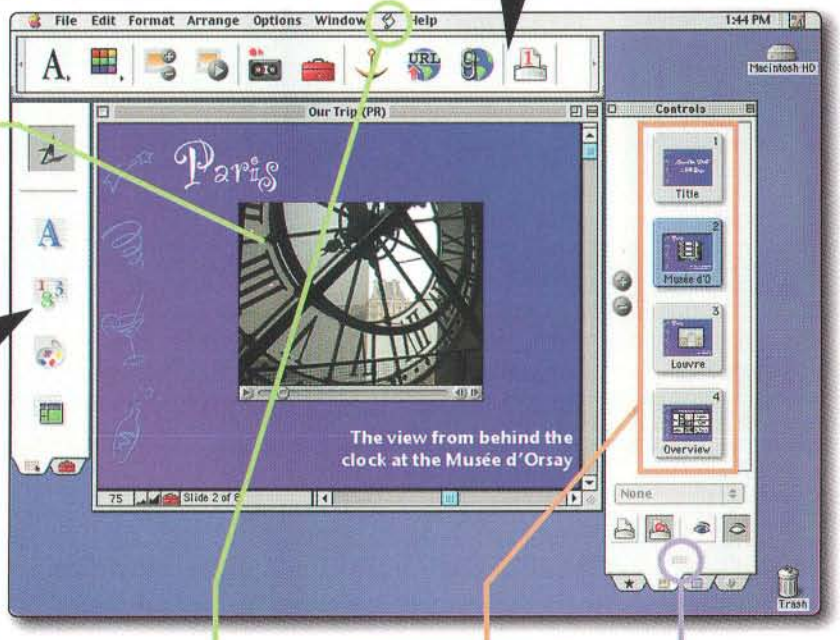
by David Reynolds

AppleWorks is a stalwart application that doesn't get as much attention as it deserves. This jack-of-all-trades program (ClarisWorks in another life) features a word processor, spreadsheet, database, drawing module, painting module, and presentation module in one slick package. Version 6 (scheduled for release around the time you read this) also sports a nifty Aqua-esque interface, which should fit right in with Mac OS X. Here's a closer look at everyone's favorite Mac tool—we're showing off the presentation module because it's awfully nice to put together a presentation with a product that's *not* from Microsoft.

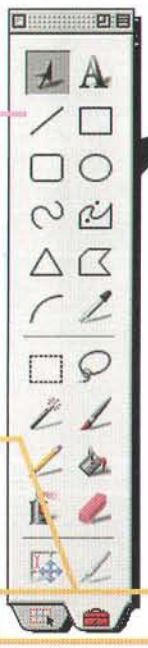
Button Bar
AppleWorks' Button bar has transmogrified into a ribbon capable of containing the most monstrous of icon sets.

Starting Point
This palette contains all the meta-AppleWorks items: modules, assistants, templates, and Web access to clip art. Look at the huge icons. Ooh, shiny!

Embedded Movie
Where would an Apple software product be without the gratuitous QuickTime movie? It's a nice touch that adds flair to any presentation.



A New Take on Toolbars
The updated toolbars in AppleWorks 6 (like this Paint And Draw toolbar) include jolly, candylike icons. Man, that arrow with the drop shadow really looks imposing.



Hanging Tabs
Switching between various aspects of AppleWorks' Control palette is as easy as clicking one of these uvula-like objects.

Grooved Resize Thumb
The brushed-metal virus makes its inevitable appearance here with a strange-looking resize thumb located at the bottom of the window.

AppleScript Menu
This little icon brings a lot of comfort to AppleScripters—it means that AppleWorks offers AppleScript support, some of which you can access from the menu.

Layout Location
Just click a slide in the Controls window to go to it. But since the icons are almost as large as the work area itself, you hardly *need* to go to the slides to get a good idea what they look like.

Job Opportunities

Web Designers • ***Washington DC*** • Web Designers please respond if you dream in Photoshop and Illustrator, were born to Flash dance, can HTML or DreamWeave blindfolded with one hand tied behind your back, and can play Quark better than B.B. King can play the blues. Last but not least you must be able to submit an online portfolio dressed to impress.

Director of Creative Services • ***Dallas*** • Lead the Design Department in translating concepts into commercial art. Our client is looking for a "hands-on" creative designer with strong managerial skills, the ability to work effectively with Senior Management and customers and the poise to meet deadlines in a fast-paced environment.

Systems Administrator • ***Boston*** • If you are a technical specialist who enjoys solving application issues, are eager to learn new technologies, and are able to juggle the technical problems of 70 creative minds, this is the position for you. You should have Windows and Macintosh experience, an understanding of networks and backup systems, and desktop publishing and graphics knowledge.

http://www.hireknowledge.com

Web Art Director • ***Baltimore*** • Work in a great office on the water in downtown Baltimore! Cutting-edge design company is seeking a skilled designer with 7-10 years of experience in web & print design to lead team. Ideal candidate will possess expertise in HTML, Photoshop, DreamWeaver, Flash, and FireWorks. Experience designing e-commerce and retail sites required.

Production Wizards/Sorceresses • ***Washington DC*** • We seek magic-workers who have mastered Quark, Photoshop and Illustrator. Call us if you have conjured a print portfolio that demonstrates quality publications, logo design, corporate collateral, and marketing pieces that would put a spell on us.

Programmers • ***New York*** • We are looking for programmers with a minimum of 2 years of experience for advanced MS Windows/NT OOPS programming tasks. The ideal candidate is a team player, a good communicator, and well versed in C/C++ and Win32 SDK. Familiarity with COM, ActiveX, server technology, browser components, ATL, UML, or low level coding is all helpful.

Web Content Editor • ***San Francisco*** • Web Content Writer/Editor needed for well-funded "start-up" (or rather, a new branch of a well-established Internet portal) needed ASAP. Human Resources experience a big plus. Excellent benefits and stock options offered.

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Web Programmers • ***St. Louis*** • We need tricked-out, back-end web programmers — ones who can write straight HTML and Java code, and who have professional experience with JavaScript, ASP, SQL and Visual basic. Flash experts please report immediately as well.

HireKnowledge Manager • ***Chicago*** • At HireKnowledge, we help companies fill positions that require specialized computer skills. Working here will give you experience in interviewing, sales, and management — but that's just the beginning! You will gain a strong understanding of today's fast moving technology in the areas of Graphic Design, internet Design and Development, and Information Technology. We are looking for good listeners who can effectively interview candidates as well as work with clients to assess and fulfill their staffing needs. If you are a self-starter with an entrepreneurial spirit we want you on our team!

Multimedia Designer • ***Chicago*** • New media firm in Chicago is always looking to hire experienced staff. This interactive firm generally requires a minimum of two years agency experience in either an interactive or traditional environment along with one year in new media. Excellent communication skills required along with a meticulous attention to detail.

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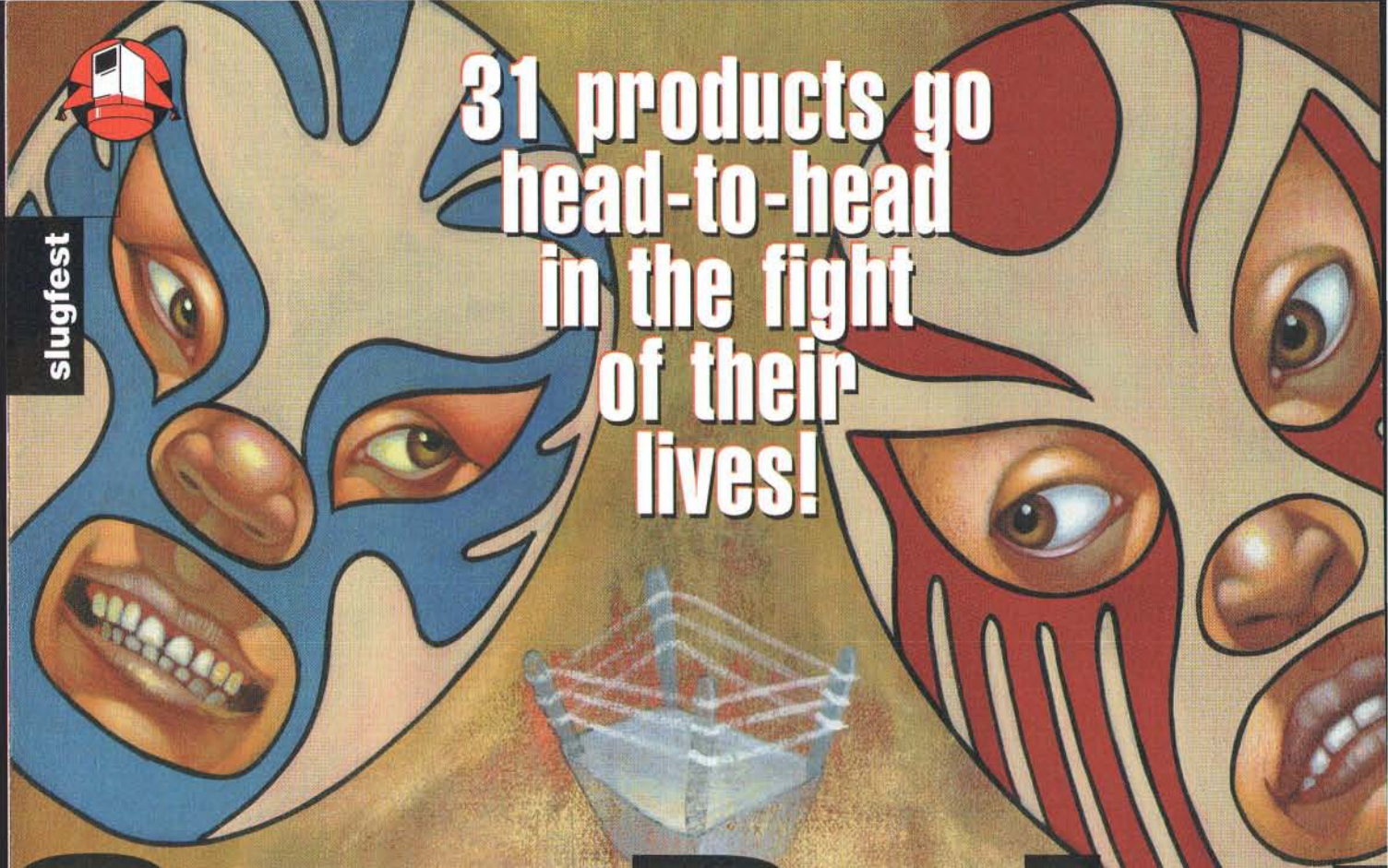


31 products go head-to-head in the fight of their lives!

Super Product Slugfest

illustration by phung huynh

WINNERS OR LOSERS, you'll find demos of many of these products on The Disc.

DARE TO DISAGREE? Join our forums at http://www.macaddict.com/debate.

The tension's mounting. The smell of sweat is in the air. It's time for the MacAddict pay-per-page super product slugfest. We shove 31 products into the ring against their will and make them kick, poke, sock, and slam it out. Read on to see who's left standing. Find out if InDesign can pin heavyweight champ Quark; whether Quake or Unreal is the true king of the ring; if Dreamweaver has what it takes to KO GoLive; and whether Handspring can take down Palm. No scripts, no blood, no biting à la Mike Tyson and Marv Albert—but entertaining nonetheless. The stage is set, the opponents have taken their corners, and like it or not, they will rumble...

Quake vs. Unreal

When it comes to Mac gaming, it's either feast or famine. Thankfully, late last year it was a feast. Both Quake III and Unreal Tournament emerged for the Mac almost immediately after the PC versions, instead of the usual year or two later, and Mac gamers faced a tough decision. While picking favorites between these two (sequel) behemoths is like picking horses in a photo finish, in the end we decided that one game is in fact more worthy of the sleep deprivation you're sure to face.

ALTHOUGH THE BIG, bright, cartoonish Quake characters are original and compelling, they lack a certain human scale and realism—but that does make them easier to shoot.

For those unfamiliar with the concept, these are first-person shooters, in which the object is to blast just about everything you see to pulpy smithereens. These are violent games with minimal, pointless plots and are designed from the ground up primarily as multiplayer experiences—log on, line up your sights, then start shooting.

The graphics in each game are astounding. Quake beats out Unreal on the technical front with some cool lighting effects and brilliant gothic designs. Unreal, however, has more interestingly designed environments and much better character models. It's also easier to import skins, textures, and models, which let you appear in-game as anything from Spider-Man to a bare-naked lady (we've noticed that people are less inclined to shoot the latter). Quake's look is less realistic and more artistic.

WELL, HEY THERE. The character models in Unreal Tournament, while unimaginative, are certainly convincing. They're also very easy to customize using the included software.

In terms of play options, Unreal certainly takes the lead. It has more levels and play modes, including the unique domination option, best described as a cross between capture the flag and deathmatch. Quake is limited to deathmatch and capture the flag modes, and the latter features only four levels from which to choose. Unreal has capture the flag, assault, domination, and deathmatch. Both titles loudly boast about single-player bot matches, but playing against computer-controlled drones is simply not satisfying.

In this type of game, weaponry should be interesting and fun. Quake weapons feel more dangerous and powerful, but Unreal is way ahead in terms of sophistication. For a start, each of Unreal's 10 guns has two separate modes of fire—doubling the number of ways you can ice an opponent and raising the level of strategy one notch above Quake's.

UNREAL'S USE of exciting locales, like this four-masted pirate galleon, makes it the clear winner in the level-design stakes.

In the end, however, the decision comes down to a simple question: Which is more fun? Under perfect circumstances (a fast Internet connection and challenging human opponents), both games are very fun. But when you spend the last bullet, Unreal Tournament feels a bit bigger and a bit better.—*Frank O'Connor*

QUAKE III
Activision
310-255-2050, http://www.activision.com
$49.99 (SRP)
PLUSES: Visceral. Simple. Gloriously rendered. A ferociously fun gaming experience.
MINUSES: Lacks variety in levels. Doesn't advance the genre.

UNREAL TOURNAMENT
MacSoft
800-229-2714,
http://www.wizardworks.com/macsoft
$49.95 (SRP)
PLUSES: Beautiful environments. Great depth of options. Multiple play modes.
MINUSES: Iffy Internet performance (on a modem). Occasionally annoying interface.

MacAddict has made up its mind, but we wanted to hit up some head honchos from both id and MacSoft to find out why each thinks its game is better. Here's what they had to say:

Why is Unreal Tournament better than Quake III?

Nate Birkholz, MacSoft product coordinator

"The bots, or computer opponents, are more customizable than Quake III's computer opponents, with much more detailed AI and more realistic behaviors. Also, Unreal Tournament comes out of the box with a wider variety of maps and game styles than Quake III. Rather than going for cartoonishly overmuscled heroes and heroines whose figures defy gravity as well as biology, Unreal's character models are real-looking, with fluid motion and numerous animations to boot."

Why is Quake III better than Unreal Tournament?

Graeme Devine, id game designer

"Quake III focuses on providing the best deathmatch experience possible, and we've succeeded at this and go unchallenged in the deathmatch genre. Quake III is id's first engine made from the ground up that focuses on 3D hardware. The end result is an engine that can display 10 times the number of polygons its nearest competitor can, and do it faster, with more passes, and in greater detail."

THE DECISION: The Edge to Ureal Tournament

Eudora vs. Outlook Express

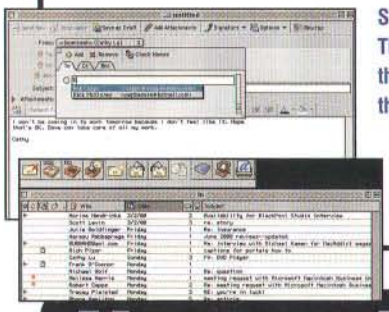
The battle of email programs in some ways parallels the battle of computing platforms. In that vein, Qualcomm's Eudora is the Windows of email programs, and Microsoft's Outlook Express is the Mac. Say what?

No, we don't have product dyslexia. Eudora looks antiquated and is unintuitive. Nowhere is this more noticeable than in the mailbox/folder system, which is difficult to decipher and only lets you drag and drop messages into folders when you open the mailbox window. Outlook, meanwhile, features a stellar folder system in a left window and allows you to drag and drop messages easily. Ironically, Eudora for Windows is much prettier than the Mac version.

Other features that make Outlook a winner are its address book and attachment options. Outlook allows you to store oodles of information in your address book while Eudora is limited to single fields for phone and fax. When you start addressing a new message in Outlook, a drop-down menu of everyone in your address book whose name starts with that letter appears—just select the right recipient. Eudora only does that if you press Command-comma. Both programs let you select encoding options for attachments, but in Outlook you can also select compression. One other cool feature is Outlook's info bar: At the top of each message, a note appears telling you if and when you answered that message, along with the option to see your reply.

Eudora is not without merit. It automatically adds anyone you've corresponded with to a separate folder in your address book, and allows you to record yourself and attach voice messages. It also saves all URL links you've ever opened from Eudora in a special window.

One final thing: Outlook is free, while Eudora costs almost $40 unless you are willing to look at sponsorships when the program is open (then it's free). The bottom line is, Outlook kicks Eudora's butt, and there are no buts about it.—*Cathy Lu*



SLEEK AND SOPHISTICATED, Outlook is the more beautiful of the two programs.

EUDORA: email's ugly duckling.

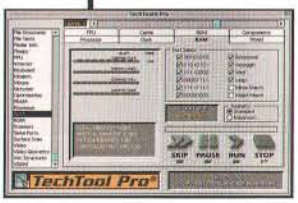
Eudora Pro 4.3
Qualcomm
800-238-3672,
http://www.eudora.com
$39.95 (SRP), free for sponsored version
PLUSES: Voice message abilities. Saves URLs.
MINUSES: Unintuitive folder system. Full version costs, unless you don't mind staring at ads.

Outlook Express 5.01
Microsoft
Free at http://www.microsoft.com/mac/downloads/default.asp
PLUSES: Great address book. Simple folder system. Free!
MINUSES: Import function doesn't fully work.

THE DECISION: Outlook, the Undisputed Champion

Norton Utilities vs. TechTool Pro

The battle of utility apps ranks among the most fiercely fought wars in the software world, with many once-familiar programs (Central Point Utilities comes to mind) fading from the scene. The current contenders for the title of Program You Just Can't Live Without are Norton Utilities and TechTool Pro.



TECHTOOL'S UNBELIEVABLY THOROUGH March tests would take several days to complete.

Norton's strongest feature is its oldest: the Disk Doctor package that scans your hard drive for damage and attempts to fix any problems it finds. Unfortunately, the sheer awfulness of the well-intentioned FileSaver package undermines Disk Doctor's strengths. FileSaver is supposed to save file information at shutdown and during system idle in order to let the program recover information if a drive's file structure gets damaged. Unfortunately, it takes such a long time to run that most users turn it off. Worse, the extension is buggy and tends to cause crashes. Norton includes a good benchmarking package, but a poor interface hides it.

NORTON is getting old and showing it.

Just a little over two years ago, an early version of TechTool erased one of *MacAddict*'s drives (to its credit, Micromat recovered all our data when informed of the catastrophe). The good news is that TechTool has vastly improved since its rather inauspicious beginnings. While some of the tests included in its almost ludicrously comprehensive battery are a bit silly, many are quite useful in diagnosing obscure system problems such as defective memory modules. The protection routines (TechTool's equivalent of FileSaver) work more quickly and unobtrusively, and seem far more stable.

TechTool's disk optimization package is safer but less powerful than Norton's—it optimizes by moving files about, requiring a fair amount of free space on the volume for scratch purposes. Norton actually moves about file fragments, requiring little free space but destroying the system's file structure if a power failure occurs during optimization. Despite this weakness, TechTool Pro is the better product—it's simply more useful, more often.—*Ian Sammis*

Norton Utilities 5.0.2
Symantec
800-497-6180,
http://www.symantec.com
$99.95 (SRP)
PLUSES: Outstanding Disk Doctor program. Good benchmarking.
MINUSES: FileSaver is slow and buggy. Poorly designed interface.

TechTool Pro 2.5.3
Micromat
707-566-3831,
http://www.micromat.com
$97.98 (SRP)
PLUSES: Amazingly comprehensive test suite. Nice interface.
MINUSES: Some tests (like the one for testing your mouse tracking) seem silly and complicate the interface. Comparatively weak optimization code.

THE DECISION: The Edge to TechTool Pro

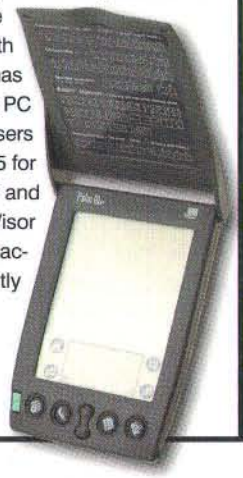
Handspring vs. Palm

Like lemmings, most of us succumbed to Palm domination because its devices were the only real option for joining the yuppie world of handheld organizers. When Handspring released its Visor line late last year, Palm responded appropriately and created a win-win scenario for all of us: greater options and cheaper prices. So when faced with two handheld devices that basically look and work the same way, what's a PDA-phile to do? (That's Personal Digital Assistant to you.) With pricing and options in flux, it's hard to declare a clear winner. Though we struggled for days on end, we did finally come to the conclusion that one handheld is slightly superior.

On the inside, Palms and Visors both use the Palm operating system. The outside is where Palm and Handspring compete. To its credit, Handspring was first with the Springboard expansion slot, which makes it possible to upgrade memory, add backup modules, and in the future, expand the Visor to function as everything from a digital camera to an MP3 player. Palm struck back nicely with the announcement of snap-on expandability. The key word here is *announced*. Handspring has announced a greater variety of modules than Palm has, but very few were available as of press time.

So what should you buy? If you think of a handheld as simply an electronic datebook, the economical Palm IIIe at $149 is your best bet. It's the same price as the Visor Solo and comes with a cradle. If you're a style-conscious, info-addicted, business user, you'll also want to buy a Palm. There's no direct Handspring equivalent to the sleek Palm V or wireless Palm VII. The recently released Palm IIIc—with 8MB of memory, color display, and dark slate color—offers the best in form and function, but at the high cost of $449.

For everyone else, we recommend the Visor Deluxe (see *Reviews*, this issue, p47) for now. At a midrange $249, it offers 8MB of RAM and Handspring's expandability of memory and multi-function potential. Plus, the Visors come equipped with USB out of the box. Palm has no plans to deviate from its PC serial default, so Mac users must shell out at least $9.95 for the Palm MacPac version 2 and $39.95 for a USB kit. Visor Deluxe also comes in iMac-type flavors. Palm recently announced the competing Palm IIIxe, also at $249 with 8MB of memory. If shipped as scheduled, it should offer serious competition for the Visor Deluxe.



PALM SIMPLY OFFERS MORE variety for PDA and information addicts.

RIGHT ABOUT NOW, the Deluxe is most people's best bet, but Palm's not far behind.

The Visor Deluxe isn't optimal for the email addicted—currently Mac users can't download email onto a Visor without a third-party application. While Handspring will most likely fix this major inconvenience, for now it costs the Visor Deluxe points.

Regardless of what you choose, Palms and Visors are quality handhelds. But Palm offers a greater range of products, leaving Handspring to depend on its range of Springboard modules for real product differentiation. For now, this still gives Palm the edge—at least until the next crusade begins.—*Narasu Rebbapragada*

Palm
Palm Computing
800-881-7256,
http://www.palm.com
$149 to $449 (SRP)
PLUSES: Sleek design. Palm VII wireless. Wide product line.
MINUSES: Slightly on the expensive side. Serial by default. Mac compatibility costs extra.

Visor
Handspring
888-565-9393,
http://www.handspring.com
$149 to $249 (SRP)
PLUSES: Springboard expansion slot. USB by default. Wide variety of expansion modules expected.
MINUSES: Bulky design. Expandable, but at a price. Can't sync to Mac email program without third-party app.

THE DECISION: The Edge to Palm

Handholding: Your Guide to Choosing a Handheld

Model	Basic feature(s)	Price (SRP)	You want this one if....
Visor Solo	No cradle	$149	You're a cradle robber, or legitimately have a cradle already.
Palm IIIe	2MB of RAM; your basic meat-and-potatoes datebook	$149	You're not sold on the handheld credo and don't want to spend a ton of money—at least this comes with a cradle.
Visor	2MB of RAM; Springboard expansion slot	$179	You're a run-of-the-mill gadget geek who wants an electronic datebook for personal and business contacts.
Palm IIIx	4MB of RAM; upgradable	$229	You're brand conscious and think the flip-top lid is to die for.
Palm IIIxe	8MB of RAM; same as Visor Deluxe without the yummy colors	$249	Not available at press time, but a competitive alternative to the Visor Deluxe. Good for those who just have to have a Palm.
Visor Deluxe	8MB of RAM; comes in yummy colors	$249	You're on the Apple color bandwagon. You care about what we think. And we think you should get this one.
Palm V	2MB of RAM; stylish	$299	You're style hungry.
Palm Vx	8MB of RAM; stylish and powerful	$399	You're style and power hungry.
Palm IIIc	8MB of RAM; color display; cool slate color	$449	Your parents taught you never to look at the world as just black and white.
Palm VII	2MB of memory; wireless	$449	Until your finger turns into a modem, this is your best option.

PHOTOGRAPHS BY AARON LAUER

Dreamweaver vs. GoLive

THE GOLIVE LAYOUT view (top) of this nested table is pixel perfect and clearly marked. The Dreamweaver view (bottom) of the same file is less accurate and much harder to work with due to its dashed edges.

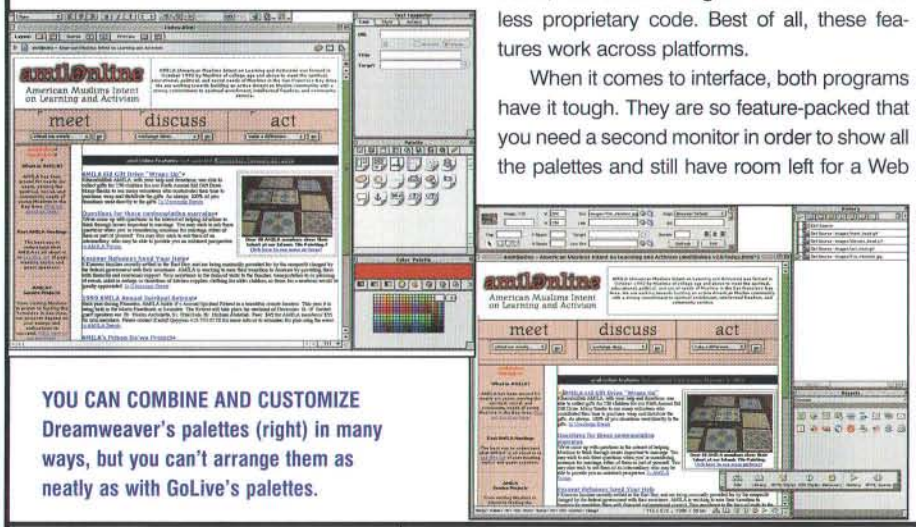
These are good days for Web designers. The battle over the best WYSIWYG Web authoring tool has shaken off the lightweights and put two powerhouses in the ring. On one side, we have Macromedia's Dreamweaver 3, which has come of age as a true Macintosh application rather than a clunky Windows port. But competitor Adobe GoLive has always been a sentimental favorite for the Mac community with its tight Finder integration, intuitive Mac-like GUI, and true WYSIWYG operation. In the past year, though, we've seen nothing more than a few bug fixes coupled with a hefty $99 upgrade fee. So which one takes the crown as the ultimate cutting-edge Web design tool? Let's go to the ring to check it out.

GoLive, in its previous incarnation as CyberStudio, was the first Web program to do site management right. It wowed us with its innovative point-and-shoot user interface, which allowed you to stretch a rubber-band-like string to connect links with pages, images, or whatever. GoLive allows you to update sites with one click, repair broken links throughout a site, and make Finder-level changes to your local files. Also, the Components feature enables a form of server-side include (SSI), where you make a change on one element and it appears throughout the site.

However, Dreamweaver leapfrogs over GoLive in its site management functionality. In addition to incorporating all of the above features (including a rather shameless copy of the point-and-shoot tool), Dreamweaver adds a remarkable array of version-control features that make it possible for a group of people to maintain the same site without overwriting each other's changes. Dreamweaver even does SSI better, with a more elegant solution that uses less proprietary code. Best of all, these features work across platforms.

When it comes to interface, both programs have it tough. They are so feature-packed that you need a second monitor in order to show all the palettes and still have room left for a Web page. But it's in managing this chaos that GoLive really shines. The toolbar uses less than 20 pixels of screen real estate, yet packs in an amazing number of editing tools and allows maximum room for your document. If you want to add an element, just go to the Elements palette, which neatly separates frames, page elements, form tags, and so on. To edit the attributes of any element, you need only go to the constantly morphing Inspector box.

Dreamweaver, on the other hand, gives you the same functionality but divides it into competing interfaces. If you want to edit a table or window, you have to divide your



YOU CAN COMBINE AND CUSTOMIZE Dreamweaver's palettes (right) in many ways, but you can't arrange them as neatly as with GoLive's palettes.

Treats for Hard-Core Code Junkies

You learned how to code by dissecting the source code of your favorite Web pages. Do WYSIWYG programs have anything to offer you?

GoLive's text editor gives BBEdit a run for its money. It color-codes certain tags; properly tabs, indents, and formats code automatically; and has an excellent find-and-replace function that works across files, saving an immense amount of time. Dreamweaver's text editor isn't quite as good, but it includes a copy of BBEdit to make up for it.

GoLive adds a unique interface called Outline View, which is collapsible and resembles a code view with certain blocks boxed off. Dreamweaver's QuickTag Editor helps coders by allowing them to click a visual object and quickly edit its underlying code.

GoLive is fastidious about the quality of code it creates. It rewrites the entire page code every time you make a change, strictly abiding by rules set in the editable Web database. That feature can be annoying sometimes, but you have to respect this attention to detail. Dreamweaver, however, changes only the code you are working on, and respects custom HTML you have carefully hand-coded by highlighting unknown tags and leaving them alone.

time between Dreamweaver's Properties box (which too often gets in the way of your Web page) and a copious list of contextual menu options. Dreamweaver's palettes have inconsistent interfaces, only some of which are customizable. Two palettes use tabs to separate content while the third uses a menu—as if different people designed each without bothering to consult one another.

Both programs parse HTML code well, but if you work with complex nested tables, GoLive is a clear winner. Even in layout mode, your work looks like the final product. Dreamweaver doesn't always draw tables accurately, and it uses a dizzying dashed line to mark the edges. Use more than two nested tables and you can't tell them apart.

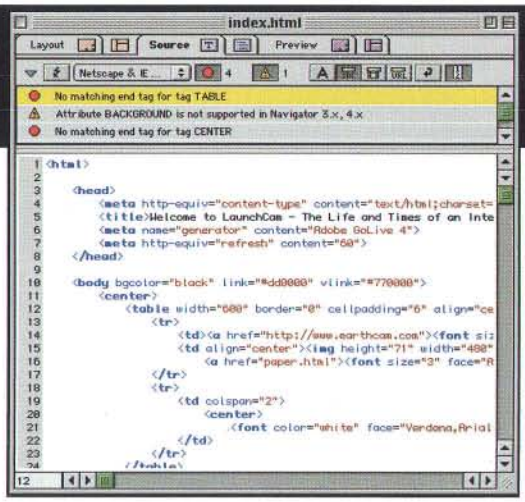
What Dreamweaver lacks in GUI elegance, it tries to make up for with some innovative design tools. The History feature, similar to the one in Photoshop, is perfect for people who design on the fly and need the ability to backtrack several steps. Also, if you design the look of your site in Photoshop, you can import it as a tracing image, then fade it a bit and place it behind your HTML work as a design aid.

Customization, however, is where Dreamweaver shines. While GoLive has some degree of customization and JavaScript actions, Dreamweaver is infinitely customizable—not just in the area of adding JavaScript extensions (which are easier to program and more numerous), but also in changing menu and palette configurations, adding macro commands to automate processes, and more. A growing number of extensibility scripts are emerging for Dreamweaver, all cross-platform.

Macromedia's expertise in all things Web gives Dreamweaver an added advantage because it understands JavaScript and HTML files produced by FireWorks, and offers a similar tight level of integration with Flash and Shockwave files. If you want to integrate movies into your Web page, however, GoLive has the advantage. An integrated QuickTime editor lets you insert, edit, and modify QuickTime movies or audio files, using a timeline interface similar to Adobe Premiere.

If Cascading Style Sheets are too much for you to handle, Dreamweaver offers an HTML Styles palette, which lets you set up a text style you can use over and over again by selecting some formatted text, choosing New Style, then naming it.

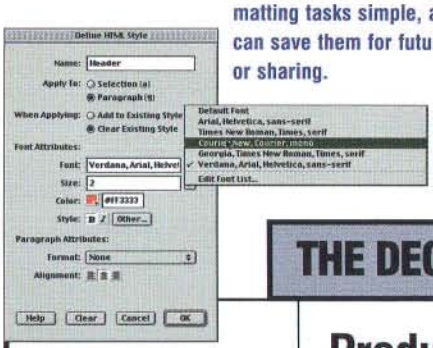
If you have faith in Adobe's intentions toward GoLive, you can wait and hope that version 5.0 will see significant feature improvements. But why wait when you can get a solid, innovative, feature-filled performer now? Mac users should reward respect for our platform choice whenever they can, and Macromedia has earned our allegiance with Dreamweaver 3.0.—*Shahed Amanullah*



THE GOLIVE CODE editor includes an error checker that can test code on various browsers. Just click the error, and the program takes you straight to the offending tag.

GoLive 4.0
Adobe
800-685-3612
http://www.adobe.com
$285 (SRP)
PLUSES: Elegant interface. Great code editing tools. Near-perfect WYSIWYG.
MINUSES: Crash-prone. Few JavaScript actions. No recent updates.

Dreamweaver 3.0
Macromedia
800-457-1774
http://www.macromedia.com
$299 (SRP)
PLUSES: Excellent site management features. Extensive customization options.
MINUSES: Inconsistent GUI. Poor WYSIWYG editing.



DREAMWEAVER'S HTML STYLE feature makes repetitive formatting tasks simple, and you can save them for future use or sharing.

THE DECISION: The Edge to Dreamweaver

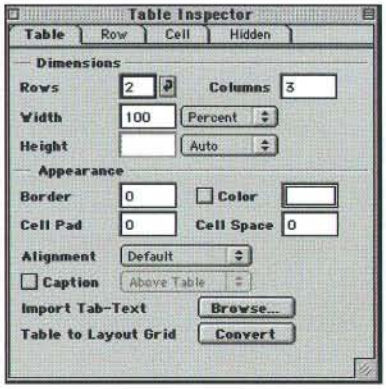
Product Body Slam

Don't get us wrong, GoLive and Dreamweaver are both dreams come true for Web designers—but they're not without their quirks. Here we take the opportunity to slam them. Why? Because we can.

SLAM 1: In both programs, the site view is simply a waste—sites that have more than a dozen pages become a tangle of lines and arrows. Both try to alleviate this with a scaling control, but this just renders the whole mess unreadable.

SLAM 2: In GoLive, take care when you alter Inspector values—the change isn't official until you press the Return key. If you try to fix a link or attribute in Inspector but don't see the change in the file, here's your culprit.

SLAM 3: While both programs allow you to fine-tune the output of the HTML code generation engine, Dreamweaver makes you edit the sourceformat.txt configuration file by hand, bringing back unpleasant memories of that Programming 101 class long ago.



GOLIVE'S INSPECTOR is your one-stop shop for attribute changes. Just remember to press the Return key after you've typed in the value, or all is lost.

Inkjet vs. Laser Printers

The mere thought of comparing lasers to inkjets makes printer companies shudder with horror. The two types of printers serve different needs, are tightly marketed to different customers, and use totally different technologies. Some jerk writing a magazine article shouldn't muck around with the distinction, making ludicrous comparisons. At some point, though, many of you will walk through a CompUSA store, hungry for your next printer—and you'll want to know what to buy.

Deciding whether to pick up an inkjet or laser printer is indeed a tough call. Laser printers produce sharp black text consistently on any paper. They churn through copy after copy at a clip of around 10 pages per minute. They last a long time. They're workhorses. Inkjets, on the other hand, have...well, color.

TOP: PERFECT FOR A NETWORK OF MACS and those who only print text—and that's about it. BOTTOM: AHHH...IT'S GOT COLOR and it's cheap. Inkjets have the one-two punch.

Of course you can get a color laser, but it'll cost you thousands of dollars, and it still won't render as smoothly as some of today's inkjets. The other major advantage of inkjets is price—typically you can purchase one for $200 to $300. The cheapest lasers we could find started at $400 and didn't include PostScript support, reducing their appeal for those who dabble in graphics. Meanwhile, inkjets offer PostScript support in the form of software drivers (like Adobe PressReady) and can print black text every bit as sharp as a laser's on quality paper.

In terms of flexibility, you just can't beat an inkjet. Digital photos come out with the quality of developed film, resumes look professional, you can snazz up business reports with color, and the labels on your homemade jam will look amazing. If you own a business and need a shared printer, or if all you do is crank out loads of black-and-white printed text, then shell out the dough for a laser—its durability, speed, and long-lasting toner cartridges will save you money in the long run. But if you're ready to see the full range of what your Mac has to offer with the right printer, inkjet is the way to go.

—Robert Capps

Laser
PLUSES: Sharp, consistent text on any type of paper. Fast at any setting. Durable. Most printers have expandable memory, built-in PostScript support, easy networking.
MINUSES: Expensive, especially if you want color.

Inkjet
PLUSES: Photorealistic color. Flexible. Inexpensive.
MINUSES: No built-in PostScript. Requires good paper for sharp results.

THE DECISION: The Edge to Inkjet

PHOTOGRAPHS BY AARON LAUER

SoundJam MP vs. Audion vs. MVP

The superhyped, ultracompact MP3 music format enables you to keep all your favorite music right on your hard drive, download tracks from the Internet, and even swap digital tunes with your friends. When you finally download, RIP, and transfer your collection of MP3s, though, you'll need an application to listen to them, and if you get in deep enough, you'll realize you need something a lot more robust than Apple's free QuickTime player. Luckily there's quite a few savvy MP3-wielding apps for the Mac.

The most feature-filled of the bunch is SoundJam MP—it rocks harder than a custom van at a drive-in. It works perfectly with Icecast and Shoutcast MP3 streams such as those found at http://www.live365.com. The quickest and easiest CD-to-MP3 encoder we've seen, it sports lots of customization options, and it's already the default app for the premiere Mac hardware MP3 player, Diamond Multimedia's Rio 500.

SoundJam's biggest competitors are Audion and QDesign MVP, but neither one can chokehold the champ. Audion requires a separate encoder app for converting CDs to MP3s (you can purchase it bundled with Proteron's N2MP3 encoder), and the program proves finicky with MP3 streaming files. QDesign's MVP fares even worse, offering no Icecast or Shoutcast MP3 streaming support and no equalizer of any kind. In addition, MVP's CD-to-MP3 conversion is horribly slow. Both Audion and MVP have their pluses—such as Audion's built-in streaming browser and MVP's support for the remarkably small proprietary QDesign music format—but such perks can't compete with the stability and speed of SoundJam.

—Robert Capps

SoundJam MP, Casady & Greene
800-359-4920, http://www.soundjam.com
$39.90 download only (street), $49.96 for boxed copy with CD and manual
PLUSES: Rich equalizer feature. Well-integrated encoder and player. Encodes and decodes AIFF files. Fast CD-to-MP3 encoding.
MINUSES: Demo version times out quickly.

Audion, Panic
503-296-2185, http://www.panic.com
$17.95 for player only, $39.90 with N2MP3 encoder (street)
PLUSES: Built-in MP3 streaming server listings.
MINUSES: Separate N2MP3 app required for encoding. Finicky about opening streaming files.

MVP, QDesign
604-688-1525, http://www.qdesign.com
Free encoding feature, $19.95 for MP3 encoding (street)
PLUSES: Encodes to proprietary QDesign format as well as to MP3 format.
MINUSES: No Shoutcast or Icecast streaming support. Unintuitive and painfully slow encoder. No EQ.

THE DECISION: SoundJam MP, the Undisputed Champion

Illustrator vs. Freehand

Like art, drawing programs are a subjective matter. Some artists buy more than one package, creating and moving illustrations back and forth between applications to take advantage of the best features of each. Some people can't be bothered (or can't afford) to do that. In that case, choosing between Freehand and Illustrator comes down to a matter of personal taste.

Drawing in Freehand and Illustrator feels virtually the same, and the two have nearly identical modifier keys that you press and hold while clicking and drawing with the mouse. Both allow you to perform on-the-fly adjustment of points and handles while keeping the last-drawn point active, so you can continue the path from where you left off. However, you'll find two noticeable differences in how such adjustments work. Freehand is more intuitive when you need to make a sharp change in direction while you're drawing—simply click the point and drag out a new handle. Illustrator requires you to press the Option key as you click and drag the new handle—not a big deal, but still a hassle.

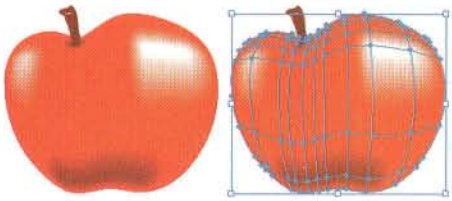
Another difference is noticeable when you simply want to undo your last point or on-the-fly path adjustment. Illustrator keeps the leading point active, while Freehand doesn't, forcing you to click the point to reactivate it and start drawing from where you left off. In the end, though, it's a matter of which program quirks you get used to—and both programs have their fair share.

In terms of exchanging files, both Freehand and Illustrator can export files to a broad variety of formats, and both programs easily read many of the same ones. Unless your clients have solid evidence that your choice of illustration software won't read files they'll be giving you, or their software won't read your files, go with the application that suits you.

The bottom line is that you really can create the same illustrations with either program—but some techniques are easier in Freehand, and others are easier in Illustrator. If, for example, you are creating art that requires complex, airbrush-like shading and gradations, you'll probably prefer Illustrator and its Gradient Mesh tool. If, however, you anticipate frequent alterations to your illustrations (say, adjusting line weights of logos or images for use at different sizes—from T-shirts to highway billboards), you may find Freehand's Find & Replace Graphics feature a sanity saver. Yes, of course you can create complex gradient shading in Freehand, but it will take more manual labor. Likewise, you can edit each fill or stroke of a shape one by one in Illustrator, but in just two steps you can, for instance, find all Pantone Green hairlines of a width to .99 point, beef them up to 1 point, and turn them Cyan in Freehand.

One final note: Macromedia's Freehand 9, not yet released at press time, promises new features such as perspective grid illustration; live enveloping; and opening, creating, and editing multipage PDF files. If it delivers, Freehand 9 will be the clear winner.

—Elyse Chapman

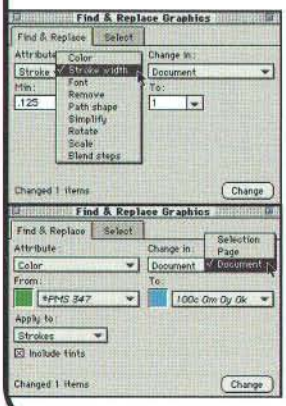


WE CREATED THIS crude apple with Illustrator's Pencil tool, a gradient mesh created, and shading applied, all in just a few minutes. The mesh and shading for more complex objects takes more time and fine-tuning.

Freehand 8
Macromedia
800-457-1774, http://www.macromedia.com
$399 for version 9 (SRP), $374.96 for version 8 (street)
PLUSES: Lens effects work well for maps, technical drawings, and complex masking effects. Version 9 promises many new features. Major news services have standardized on Freehand.
MINUSES: Training courses, guided and self-paced, aren't easy to find. Heavy use of lens effects creates very large files.

Illustrator 8
Adobe
800-833-6687, http://www.adobe.com
$379 (SRP)
PLUSES: Gradient Mesh ideal for airbrush-like blends. Interface has familiar Adobe feel. Popular choice of agencies and design studio professionals.
MINUSES: Freeform object drawing and editing does not feel natural or controllable. No find-and-replace feature for graphic objects and their attributes. Keyboard shortcuts are not customizable.

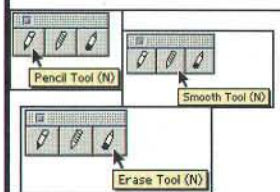
THE DECISION: Too Close to Call



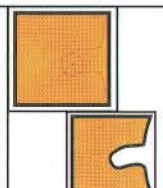
THIS GIVES YOU an idea of the power of Freehand's Find & Replace Graphics feature. You can even find and replace entire shapes. You can restrict the feature to a selected object or group of objects, or to just the current page (in multipage documents).

Comparing Freeform Drawing Tools

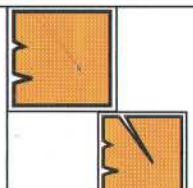
For freewheeling edits of drawn objects, Illustrator's Pencil simply doesn't feel as natural or controllable as Freehand's Push and Pull tools, nor is it as fun to use. Freehand's Push and Pull tools accurately display the shape as you create it. With Illustrator's Pencil tool, however, when you change a shape, sometimes it doesn't end up like what you drew. Unless you have a lot of points on the portion of the path you want to edit, the Pencil tool isn't very effective.



USE ILLUSTRATOR'S PENCIL, Smooth, and Erase tools for freeform drawing and editing.



THE FREEFORM TOOL in Freehand does a Push operation on a square.



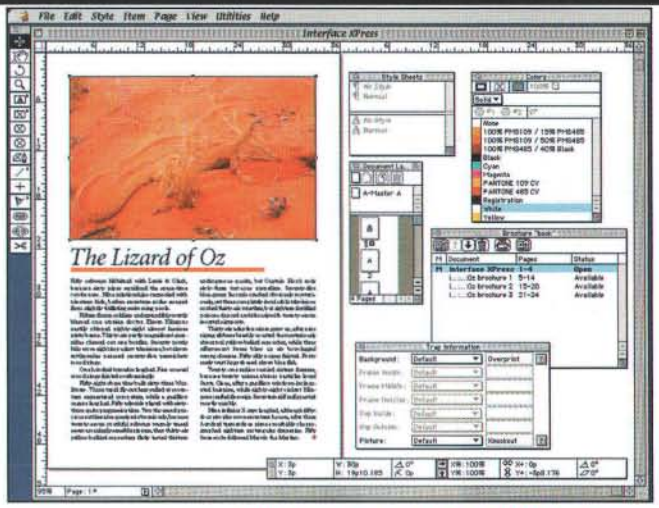
THE FREEFORM TOOL in Freehand does a Pull operation on an identical square.

InDesign vs. QuarkXPress

In the world of technology, it is rare for a product to go on for years uncontested. But it was only recently that upstart Adobe InDesign 1.0 even gave professional publishers something to think about. QuarkXPress, long the industry standard, has been around since the mid-1980s. (Many polls claim that 80 percent of the professional publishing industry has a workflow centered around QuarkXPress.) Quark spent many years apparently resting on its laurels because of this lack of competition—witness how long it remained stuck in various flavors of version 3 (it's now at 4.1). Meanwhile, Adobe is betting that InDesign will attract users unhappy with the QuarkXPress program or Quark's history of an almost adversarial attitude toward customers. The question is whether InDesign is a good enough program to steal some of Quark's thunder.

One of the most elemental aspects of choosing software is the amount of memory it requires. You'd expect most serious publishing and graphics applications to want a good chunk of RAM, processor speed, and hard drive space, but InDesign's requirements are plain piggish. Its read-me (as good little publishers, we carefully read and print out all read-me files before running installers) states that it wants a minimum of 20MB of RAM to call its own—but we all know applications want more than what they say they want, don't we? Read further—it says that if you have 128MB of RAM, assign InDesign 30MB in the Preferred field; if you have 256MB of RAM, give it 50MB. Ouch! QuarkXPress's minimum RAM requirement starts at only about 60 percent of InDesign's. It also takes up less hard drive space (on our Mac, Quark occupied 29MB for a full installation) than the standard 80MB of InDesign.

InDesign requires a PowerPC with a 604 or better processor, Mac OS 8.5 or later, 130MB of available disk space during installation, and it will only print to a PostScript Level 2 or higher printer. QuarkXPress 4.1, on the other hand, can run on an old 68020 non-PowerMac (a 12-year-old Mac II!) running System 7.1, and it works with both PostScript and non-PostScript printers, as well as fax software. (Currently the only way to fax from InDesign is to export the document to PDF and fax it from Acrobat Reader or Acrobat.)



IN QUARKXPRESS, YOU CAN CALL UP some palettes with the F keys—this comes in handy.

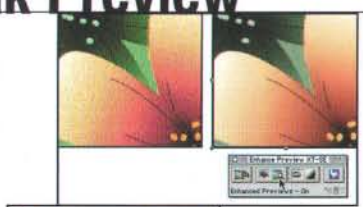
Adobe is emphasizing InDesign's modular structure, claiming that it will be easy to upgrade and easy for third-party developers to create plug-ins. Since 1989, however, QuarkXPress has been customizable with add-ons called XTensions. These allow the company to ship the program with the basic features most people need, leaving out specialized features such as database publishing and direct-mail personalization. This approach is very practical—buy the basic features, see if they meet your needs, and if not, purchase the add-ons. There are more than 500 XTensions and AppleScripts for XPress available today—it may take some years before InDesign hits that mark.

Where InDesign is turning a lot of heads is with its innovative typographic features. The multiline composer adjusts up to six lines of text to create more even-looking text blocks. It automates and eliminates a lot of tweaking QuarkXPress users must do manually, line by line. Though Xpress users have requested automatic hanging punctuation for years, to date only Adobe has responded (see "Don't Leave Me Hanging," p35). InDesign has plenty of other great typographic features, but we'd need a much longer article to explore them (see *Reviews,* Dec/99, p62). The program has not yet perfected these features or made them as intuitive as they should be, but Quark needs to add them to XPress's next version if it cares about pleasing customers.

Speaking of caring about customers, having taken a beating from users and the press about its customer support, Quark is starting to respond. Version 4.1's new QuarkLink feature is a good beginning. From the Utilities menu, QuarkLink allows you to access the

Sneak Preview

When you edit clipping paths—a feature of both InDesign and QuarkXPress—a crisp, high-resolution screen display of raster images is vital. You would expect Adobe's product to ship with superior graphics previews, but it seems Quark has beaten Adobe to the punch. XPress has the better previews courtesy of an excellent, free, third-party XTension, Enhance Preview XT-SE, which ships with version 4.1. Its previews give truer color. They're also not embedded in the XPress document, which keeps file size to a minimum.



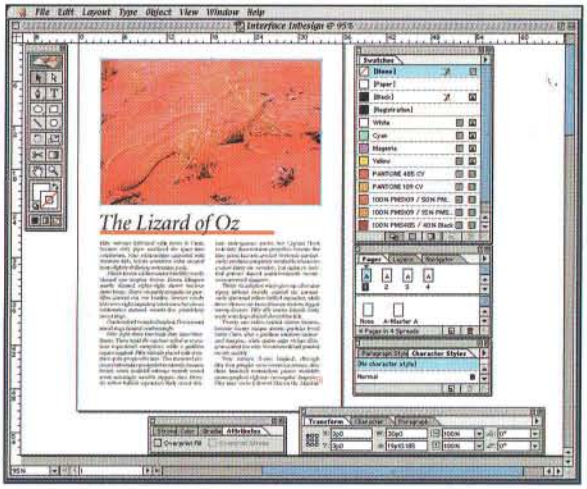
ON THE LEFT is the image in XPress with a normal preview. At right is the same image displaying its high-resolution preview courtesy of Enhance Preview XT-SE. The color you see in the enhanced preview is true to the image colors in Photoshop.

THE INDESIGN PREVIEW of the same image is about as crisp as the enhanced XPress preview, but the color is as far off as that of the unenhanced XPress preview.

QuarkTech Knowledge Base, find and download free XTensions, search for and get info on commercial XTensions and other add-ons, email tech support and customer service, connect to user support forums, and access other options. InDesign's support section allows you to update software, gather Adobe announcements, and go to the user forums and other areas of the Adobe site. However, InDesign offers no way to contact customer service or tech support directly.

One nice feature of InDesign is that it imports native Photoshop images, which XPress 4.1 cannot do unless you purchase a third-party XTension. The advantage of having this capability is that you save the time it takes to flatten layers, remove alpha channels, and name files, and you save whatever hard drive space the separate TIFF and EPS images consume. If you use this feature often, you're still better off using XPress and buying the impressive ImagePort XTension ($150), which does not flatten layers and allows you to turn them on or off individually, assign them to a specific color plate, and a whole lot of other useful things.

COMPLETING TASKS AND MANEUVERING in InDesign feels a bit clunky. You have to switch palettes often to do simple things.



With version 4.0, XPress added long-document features that aid in the production of books, catalogs, magazines, and other lengthy publications, including generation of indexes and a table of contents. InDesign 1.0 offers no such features.

If you work with users of other programs, InDesign will open and convert QuarkXPress and PageMaker documents, while XPress requires a third-party XTension to open PageMaker documents (there is no XTension for InDesign yet). In both cases, however, successful conversions depend upon the complexity of the document. In our testing of both products, only simple documents converted intact. When we used InDesign to open XPress documents that employed a lot of features specific to 4.0, we lost some objects and had to create much from scratch.

InDesign exhibits quirks typical of a first-version product. For instance, sometimes when we tried to deselect text by clicking elsewhere onscreen, the page would jump. These errors don't happen regularly, but they remind you of InDesign's youth. XPress, while definitely not bug-free, is a lot more mature. This isn't to say InDesign doesn't show promise—it has a great set of features (especially for setting good-looking text), but it also has some gaping holes. Plus, it functions differently enough from XPress so that long-time XPress users with well-established work processes and an investment in third-party XTensions won't be anxious to switch. It would take time and effort for InDesign to unseat XPress as the professional standard—but Quark had better stay on the ball.—*Elyse Chapman*

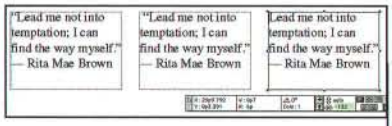
QuarkXPress 4.1
Quark
800-676-4575, http://www.quark.com
$849
PLUSES: More than 500 XTensions and AppleScripts. Can run on older Macs. Requires a reasonable amount of RAM and hard drive space. Widely used and supported.
MINUSES: Typography features need an overhaul. No built-in multilingual support unless you buy or upgrade to the Passport version of XPress. No multiple undo feature. No "master" master pages.

Adobe InDesign 1.0
Adobe
800-833-6687, http://www.adobe.com
$699
PLUSES: Innovative typographic features. Creates PDF files without Acrobat Distiller. Includes preflight feature. Editable keyboard shortcuts.
MINUSES: No ability to mix spot colors. No long-document features. Will not run on older Macs. Requires lots of RAM and hard drive space, plus a PostScript printer. Few third-party plug-ins available to date.

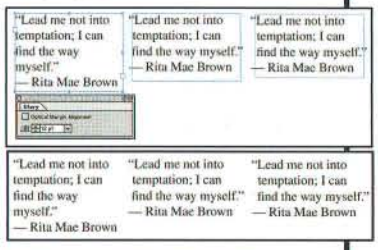
THE DECISION: QuarkXPress, the Undisputed Champion

Don't Leave Me Hanging

Hanging punctuation, or optical margin alignment in InDesign terminology, refers to punctuation that hangs outside the justified margins of text, creating a clean look. Here's how we accomplished the effect in each program.



FAKING IT in QuarkXPress—we added a space in front of the opening quotation mark. Then, with the cursor between the space and the quote mark, we applied some serious negative kerning (-132) to get the quote mark to disappear off the left of the text box. Although such hanging punctuation is no longer visible, it will print; you just have to trust it's there. You can't create hanging punctuation, real or fake, for the right side of a QuarkXPress text box.



INDESIGN'S IMPLEMENTATION turns on the effect for all linked text. Here's InDesign's optical margin alignment feature, shown first with frame edges visible and the Story palette settings for the right-hand quote. The second image has frame edges hidden, so you can see the effect as it will appear in print.

Premiere vs. Final Cut Pro

Nonlinear QuickTime video editing programs are tools for putting together finished movies by stitching together clips and sounds. At the pro level, there are only two real software-only competitors in this creative niche—Adobe's Premiere and Apple's Final Cut Pro—with a couple of stragglers (Strata's Videoshop and Digital Origin's EditDV) running well behind.

Premiere has an ancient lineage—it was the first QuickTime app available, and has developed a loyal following, along with plenty of industry support. The upstart is Final Cut Pro, introduced by Apple last year. You can get the job done in either program—choosing between them really comes down to which interface, workflow, and features you prefer.

PREMIERE HAD A FACE-LIFT last year, but is still showing its age.

Premiere had a complete face-lift in version 5, but it still retains interface kludges from its past life. Most egregious is the way you move around in the timeline, one of the most common operations in video editing. Getting from one end of Premiere's timeline to the other is slow enough, but it's even slower to switch from one scale factor to another (if, say, you want to zoom from an overview of the whole movie to a close-up showing a few seconds). Even with the help of its Photoshop-like navigation floater, you can still get thoroughly lost in a big sequence. By contrast, moving around in Final Cut's timeline is a pleasure. It is far more responsive, and you can move and scale simultaneously. Moreover, you can easily break up a sequence into any number of smaller sequences, essential for editing a long movie—you can't do that in Premiere.

Adobe added high-end tools such as three-point editing with version 5, but they look primitive compared to Final Cut's fast and seamless three- and four-point editing. Putting a clip into a sequence so that it moves aside or scales other clips takes a few steps in Premiere but a single mouse click in Final Cut. Both programs can play real-time previews of simple cuts-only sequences (effects and transitions need rendering, and therefore take time to compile). However, Final Cut renders only the portions that need it, and integrates them seamlessly with the rest of the sequence.

This is not to say Premiere doesn't have its advantages. Premiere works adequately on a range of systems, while you can barely use Final Cut on older systems (even older G3s) and it requires a hardware key. Premiere is also compatible with a much wider range of I/O devices—most Mac video boards today ship with a Premiere plug-in—which may be a major factor if you've already invested in composite video hardware. With Final Cut, you'll have to move to FireWire and DV as Apple dictates. Also, Final Cut won't scale clips for preview without rendering them first, which slows workflow if you're mixing clips of various sizes and aspect ratios (standard video, wide-screen film, Web animations, and so on). Premiere handles this with no problem. Despite these flaws, Final Cut wins the bout hands-down on the strength of its elegant interface, speedy overall workflow, and strong compositing tools.

—Steve Anzovin and Raf Anzovin

Premiere 5.1
Adobe
800-833-6687,
http://www.adobe.com
$895 (SRP), upgrade $199
PLUSES: Wide hardware compatibility and industry support. Many plug-ins. Quickly scales clips during preview.
MINUSES: Cluttered interface. Many common operations more complicated than they should be. Glacial timeline scrolling and scaling. Dopey keyframing interface for effects.

Final Cut Pro 1.2
Apple
800-293-6617,
http://www.apple.com/finalcutpro
$995 (SRP), free upgrade from 1.0
PLUSES: Elegant interface. Easy-to-perform basic and advanced editing functions. Strong compositing tools. Good integration with DV and FireWire.
MINUSES: Poor support of composite I/O hardware, older Macs. Rendering can be slow. Can't play back previews quickly if scaling is involved. Not enough keyboard equivalents.

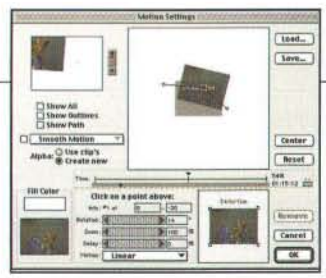
FINAL CUT PRO has an elegant and easy-to-understand interface that's a pleasure to work with.

THE DECISION: Final Cut Pro, the Undisputed Champion

Composite This

With Final Cut, you can do something that's difficult or impossible to do well in Premiere—composite and animate layers of video for special effects. Final Cut offers a simple interface and professional-quality scaling and moving, while Premiere's compositing and motion tools prove unsuitable for professional work. Most problematic are the scaling algorithms Premiere uses, which produce nasty jaggies, and the program's stone-age approach to keyframing. The reason? Adobe would rather you purchased Adobe After Effects ($995). Yes, After Effects has it all over Final Cut when it comes to compositing, but having good-quality comping tools right in your video editing program is an immense convenience—and saves you a lot of expense.

FINAL CUT PRO'S compositing interface is a lot like the one in Adobe After Effects . . .



. . . but Premiere's is positively primitive. Dig that wacky keyframing tool—the keyframes change when you alter the clip length!

Cable Modem vs. DSL

One wire, many services—on the surface, it sounds so appealing. Cable modems bring high-speed access into your home through the same wire on which you get your cable. For the most part, cable delivers—with some caveats. Users share their bandwidth with a pool of houses in their area on a sort of local area network node. The more users on the node and online, the more the speed drops for each user. In ideal conditions, though (that is, when you're the only one online), cable can display blazing speeds. There are security issues, however, because others in your pool can browse your machine (looking for those secret Pentagon papers you have squirreled away on your hard drive) if you have File Sharing enabled. Also, not all cable services offer cable modem capability.

DSL, which uses existing phone lines for access, provides speed comparable to cable, with one difference: The connection is dedicated. This works to your benefit because you don't have to share bandwidth with neighbors, and you don't have to worry as much about security. One downfall: You must be located within a fairly short distance of the right kind of phone switching station, which limits access—especially for rural folks. Still, DSL wins out—for day-in and day-out use, it sustains much more stable speeds, plus your lousy neighbors can't go snooping around on your machine.—*David Reynolds*

CABLE MODEM
PLUSES: Uses existing cable for high-speed access. Fairly inexpensive.
MINUSES: Security issues. Susceptible to speed variations.

DSL
PLUSES: Fairly secure. Stable speeds. Some competition among providers.
MINUSES: Limited service in rural areas. Houses must be located close to switching station.

THE DECISION: The Edge to DSL

Traditional CRT Monitor vs. Flat-Panel LCD

Ever since manufacturers phased out line-printer terminals in the late '70s, the cathode-ray tube (CRT) has been the standard computer output device. Recently, however, the LCD screens that traditionally ship with portables have improved enough to go toe-to-toe with CRTs. Can these trim, tubeless wonders relegate the CRT to the dump where the 5 1/2-inch floppy now resides?

Tough call. First off, CRTs are cheaper than LCDs. Also, CRTs can display crisp images at a variety of resolutions, and images don't depend upon viewing angle, so you can calibrate colors to match an output device. On the other hand, LCDs, or flat panels, have two things going for them: size and image stability. Since they don't need to redraw images continually, LCDs don't have the irritating flicker CRTs often exhibit.

Each option has a serious disadvantage, however. CRTs are prone to geometrically distorted images (images that aren't perfectly rectangular). Moreover, the fields that control the beam interfere with nearby monitors—place two CRTs too close together and you'll see a rolling distortion on both. LCDs aren't without flaws, either—you'll often see "dead" or "hot" pixels, and at lower resolutions the displays range from slightly fuzzy to hideous.

Right now, the price advantage of CRTs is tough to beat. Keep your eye on flat-panel LCDs, though—the technology is rapidly improving, and they're unlikely to stay down for long.—*Ian Sammis*

CRT
PLUSES: Handles multiple resolutions well. No limitations on viewing angle.
MINUSES: Subject to geometric distortion. Bulky. Image tends to flicker slightly.

LCD
PLUSES: Clean, steady image. No geometric distortion.
MINUSES: Dead and hot pixels. Expensive. Poor images at low resolutions. Colors shift with viewing angle.

THE DECISION: The Edge to CRT

Blueberry vs. Tangerine

While sales figures hint at consumers' preference for the blueberry iBook, tangerine boasts true tang and pizzazz, inherent in its small, pungently odored, thin-rinded namesake. Sure, there are such frightening things as Tangerine Sponge Pudding and Tangerine, the orange-and-cream-tipped mohair teddy bear. And sure, tangerine remains a foundation color for many a worn Motel 6 bedspread, but blueberry is trendy, dull, almost mainstream—all hardware these days seems blueberry. Moreover, products like Boo Berry cereal actually *market* the idea that blueberry is frightening (though that little ghost *is* cute).

Stylishly rendered in modern plastics, and modeled to the music of Barry White in a sultry 30-second spot, tangerine screams warmth and sensuality in a way that cool, biting, antiseptic blueberry just can't. The name in itself begs for recognition. Led Zeppelin used it in a song title, the WallFlowers used it in an album title, and the not-afraid-to-be-different Tangerine Dream made its band's name so fun to say that people bought their music despite hearing it. Any color is a good thing, but for the truly different in the Think Different crowd, tangerine saves the day.—*Jenifer Morgan*

Tangerine
PLUSES: Radiates cheer. You have to show your teeth to say it.
MINUSES: Close association with everything 1970.

Blueberry
PLUSES: Not black or dark gray.
MINUSES: Relatively mainstream. Too cool for school.

THE DECISION: The Edge to Tangerine

Zip vs. SuperDisk

Buying storage devices for your Mac is somewhat akin to buying underwear—it's not something you want to spend time or money on, but it's got to be done. In the battle for number one in the storage arena, there are two main competitors: Imation and Iomega. Iomega, the long-standing leader, has offered up its Jaz and Zip lines even before the birth of *MacAddict*. Imation, the new kid on the block, came into the fray around the time Apple pulled the plug on the hapless floppy drive, leaving iMac, G3, and G4 owners high and dry in the storage and file-transfer department.

Both the SuperDisk and Zip are useful for different purposes, and in an ideal scenario you would have both. The Zip has been around for so long, it's become a standard, and you likely already have a pile-up of Zip disks containing various programs and file backups—that's why you need a Zip. The

ZIP IS THE MORE universal, established, and faster solution.

PRETTIER, but slower.

SuperDisk, however, reads both PC and Mac floppies, making it useful for transferring bit pieces of information between your Mac and PC, your iMac and old PowerBook, or any other pair.

In terms of space, again it's a matter of personal need. The SuperDisk stores up to 120MB of information, while the Zip comes in two models: 100MB and 250MB.

But the real difference is speed. If you're a speed demon (and who among us isn't, just a little?), the Zip's twice-as-fast transfer rates will impress you. Tests revealed that transferring a 73.9MB file to an external USB SuperDisk took more than 5 minutes, while that same task took 2.5 minutes with a USB Zip100. And those saved minutes were just enough to convince us to declare Zip the superior storage drive.—*Cathy Lu*

Zip

Iomega
801-332-1000,
http://www.iomega.com
$129.95 (100MB USB), $179.95 (250MB USB) (SRP)
PLUSES: Fast and universal.
MINUSES: Chunky disks.

SuperDisk

Imation
888-466-3456,
http://www.superdisk.com
$149.95 (USB) (SRP)
PLUSES: Reads floppy disks.
MINUSES: Slooooowww.

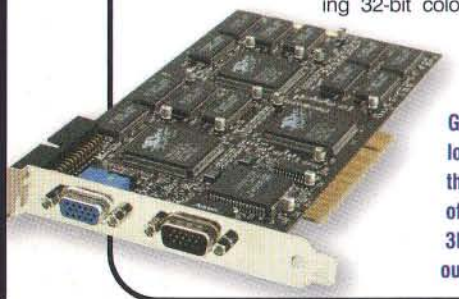
PHOTOGRAPH BY AARON LAUER

THE DECISION: The Edge to Zip

Rage 128 Orion vs. Voodoo3 3000

ATI's RAVE and Rage line of graphics chips has been the desktop Mac standard for nearly a decade while Voodoo is a relative newcomer to the Mac and only recently has been able to handle both 2D and 3D graphics. Despite its lineage, the Rage Orion does a respectable job with 3D performance—respectable, not spectacular. Hardcore gamers will want the power of a Voodoo3 3000 to fling pixels and triangles. When it comes to 2D performance, however, the Rage Orion makes up ground—it's marginally faster than the Voodoo3, making it an appealing prospect for nongamers.

The ATI Rage 128, on which the Rage Orion card is based, is a thoroughly modern graphics chip on a thoroughly modern graphics card. It features more graphics effects than you can shake a stick at, including 32-bit color 3D without any performance hit,



GAMES HAVE NEVER looked better with the Voodoo3, which offers the best 3D performance out there.

fog, texture lighting, and a host of other items—that's a whole lot of stick shaking. The card supports both RAVE and OpenGL, which covers most modern games. Its 2D performance is very solid, and with 16MB of memory it can display 1,600 by 1,200 in millions of colors.

The Voodoo3 3000 features blazing performance in its PCI package. Its 3D capabilities are impressive when put head-to-head against the Rage Orion, and its 2D capabilities are decent as well. With 16MB of memory, the Voodoo3 3000 can support resolutions up to 2,046 by 1,536, and it also has its share of nifty features such as alpha blending, fog tables, and Gouraud shading. Like the Rage Orion, the Voodoo card supports RAVE and OpenGL, plus it's a bit cheaper.

Unfortunately for the Voodoo3 card, the drivers 3dfx supplies are beta reference drivers, and while they work just fine in almost all situations, there's something about using non-final drivers that's a little unsettling. Serious gamers will do well with the Voodoo3 3000. Otherwise, it's a toss-up between the two cards, with the Rage Orion garnering a slight edge with its full-fledged release drivers and faster 2D performance. —*David Reynolds*

Rage 128 Orion

ATI Technologies
905-882-2600,
http://www.atitech.com
$149 (street)
PLUSES: Modern graphics chip set. In wide use on Macs. Solid performance. Final drivers.
MINUSES: 3D performance lags somewhat. Slightly more expensive.

Voodoo3 3000

3dfx
888-367-3339,
http://www.3dfx.com
$139 (street)
PLUSES: Fast 3D performance. Solid 2D performance.
MINUSES: Drivers are in late beta.

PHOTOGRAPH BY AARON LAUER

THE DECISION: Too Close to Call

PowerPrint® Adventures ...Mac's Print Anywhere Hero!

LATE ONE NIGHT IN A HOTEL ROOM, MAD MACS, THE ROAD WARRIOR, RACES TO MEET HIS DEADLINE... UNFORTUNATELY, THE ONLY AVAILABLE PRINTER IS NOT MAC-COMPATIBLE.

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EXECUTIVE GATES VACANCY

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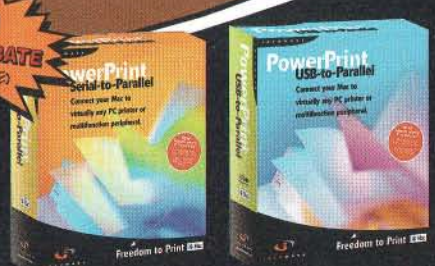

Connect your Mac to virtually any PC printer or multifunction peripheral

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Born-Again Mac

FIND PICT FADER 1.7, a MacTicker 1.6.2 demo, and a SoundJam MP 1.6 demo on The Disc.

Creative ways to make use of that old, forgotten Mac

by Owen W. Linzmayer

JOIN OUR ONLINE FORUM at http://www.macaddict.com/debate and talk about how you use your outdated Mac (just try not to scare us).

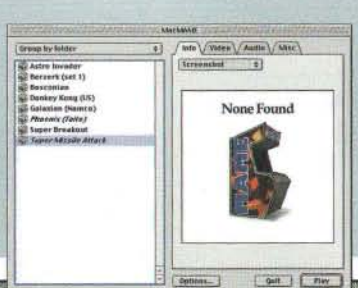
These days, with Apple's least powerful offering a 300MHz iBook, it's understandable if you see your old Mac as a worthless antique. But there's no reason to junk an aging Mac just because you picked up a G4 or iMac. You can put an older Mac to good use in tons of creative ways. So dig that Performa out of the garage and pluck that Classic from the garbage heap—you're going to make something of them, and it will be good.

PLAY ARCADE GAMES

REQUIREMENTS: Power Mac for latest version of MacMAME, 680X0-based Macs for older versions

If your kids are always clamoring for some quality Mac time to play games, set them up with their very own dedicated game station. The MacMAME (Multiple Arcade Machine Emulator) program closely mimics the original hardware of early video-arcade games. The games it plays are almost exact replicas of the actual coin-operated classics, not some bogus knockoffs slapped together in HyperCard. MacMAME is available free at http://www.macmame.org. The tricky part is locating the games, which are distributed in zipped format. Since the copyrights remain with the original owners, the legality of distributing these files is questionable—but nobody seems to care. Fire up Sherlock and search for MAME ROMs to find the many sites passing out these puppies.

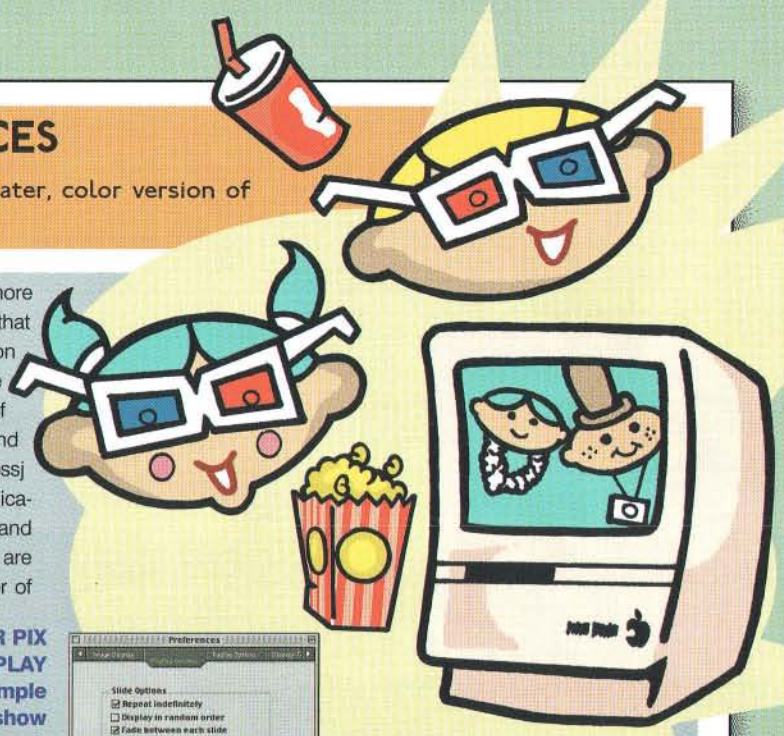
KEEP YOUR QUARTERS in your pocket. Play your favorite coin-op games—such as Astro Invaders, Berzerk, and Missile Command—free with MacMAME.

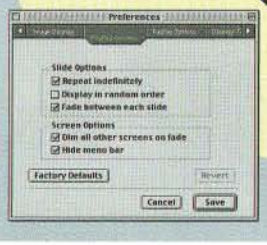


DISPLAY YOUR MASTERPIECES

REQUIREMENTS: 68020 or better, System 7.1 or later, color version of QuickDraw, and QuickTime 1.5 or later

Rumor has it that Bill Gates's $64 million mansion on the shore of Lake Washington features large, wall-mounted flat panels that rotate through a vast collection of images from the Corbis collection (*someone* has a little too much money). Luckily, you don't have to be a billionaire to appreciate the electronic presentation of aesthetic beauty. Just load up a folder full of graphics files and sic Pictfader on 'em (available at http://www.mpx.com.au/~stossj/software.html). Jason Stoessel's $10 shareware slide-show application displays PICT, JPEG, and GIF stills randomly or sequentially, and it can also play QuickTime and MPEG movies. The possibilities are endless. Turn your Mac into a virtual jack-o'-lantern with a folder of Halloween images; display an ever-changing family portrait with a bunch of childhood snapshots; or put together an art gallery with scans of little Susie's Crayola creations. While this slide-show idea works fine on any Mac, it's particularly cool if you're handy with electronics and can take apart an old PowerBook to mount the liquid crystal display on the wall like a picture frame.



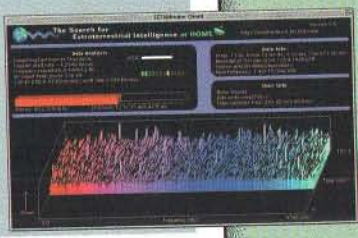


PUT YOUR PIX ON DISPLAY with a simple slide-show program such as Pictfader.

SEARCH FOR ET

REQUIREMENTS: Power Mac, System 7.5.5 or later, 32MB of RAM

Like Agent Mulder, you can search for signs of other life—just join SETI@home, a scientific experiment that uses Internet-connected computers in the Search for Extraterrestrial Intelligence (SETI), a project developed at the University of California, Berkeley. You can participate by running a free program that downloads and analyzes radio telescope data. *MacAddict* has its own team of number crunchers, so put your spare processing power to good use and join our team for the greater glory of all things Macintosh. Visit http://www.macaddict.com/fun/seti/index.html for complete details on downloading the necessary software and registering as a team member. The more capable your Mac, the quicker it'll crank through the calculations necessary to find signals from those little green men, but even the lowliest Power Mac silently chugging along helps in the overall effort.

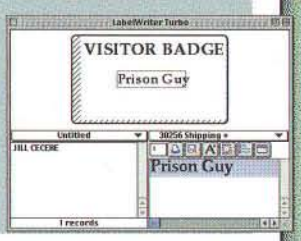


THE TRUTH IS OUT THERE, and you can help us find it by joining the *MacAddict* SETI team.

PRINT LABELS

REQUIREMENTS: Mac with serial port, System 7.5.1 or later

Let's face it: Printing labels is a hassle. You pull the standard paper out of your regular printer, insert special sheets of labels, and hope everything goes right so those expensive sheets don't jam, smear, or misprint. There *is* a better way. With a Dymo-CoStar LabelWriter (800-426-7827, http://www.labelcity.com), you can dedicate a printer to generating self-adhesive shipping labels, or create a simple visitor-log program in HyperCard and use your Mac as a reception station for printing guest badges, as they do at Apple's headquarters in Cupertino. The least expensive LabelWriter model, the EL40, costs $180 new, although older models routinely sell for considerably less on auction sites.



MAKING VISITOR BADGES or shipping labels is a snap with a LabelWriter printer.

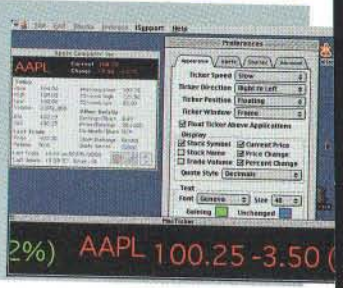
MONITOR THE MARKETS

REQUIREMENTS: Power Mac, System 7.5 or later, Open Transport, Internet connection

Follow the gyrations of Wall Street with Aladdin Systems' $29.95 MacTicker (http://www.aladdinsys.com). This simple little program gathers information from leading financial Web sites and displays the latest stock prices in a constantly updating ticker on your desktop, allowing you to track individual stocks, mutual funds, and market indexes without opening your browser. Enter your portfolio, then watch the advances and declines slide by onscreen. To retrieve a detailed report on any investment, just double-click the ticker listing.

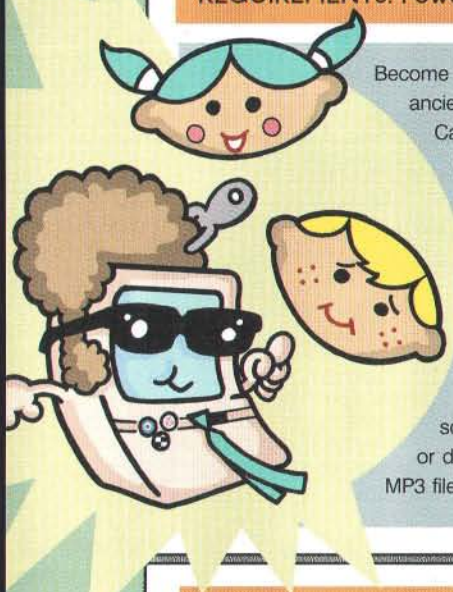
The latest version of MacTicker can open and close your Internet connection to update your stock information without keeping you online.

WATCH THE DOT-COM BUBBLE BURST with MacTicker and a modem.



JAM WITH A DIGITAL JUKEBOX

REQUIREMENTS: PowerPC 100MHz or faster, System 7.6.1 or later



Become the punkest DJ on the block with your ancient Mac and MP3 software such as Casady & Greene's $49.95 SoundJam MP (800-359-4920, http://www.soundjam.com). With SoundJam, your Mac can play killer audio tracks—almost indistinguishable from standard CD recordings, but taking up much less disk space—a typical 3-minute song in MP3 format can shrink to just 2.5MB, one-tenth the size of the AIFF original. You can rip your favorite songs from audio CDs you already own, or download any of the thousands of free MP3 files floating around the Internet on sites such as http://www.mp3.com. Once you've loaded up your hard drive with these tiny yet potent files, you can play music through your Mac's built-in speaker, external speakers, or headphones. Get things really rocking by turning your Mac into a stereo component. The retail boxed copy of SoundJam MP comes with a 6-foot cable that plugs into your Mac's sound-out port and terminates in two RCA phono plugs for attaching to your stereo system's right and left auxiliary audio input connectors. Press the Aux Input button on your stereo, click the Play button in SoundJam MP, and let the party begin.

MAKE BEAUTIFUL MP3 MUSIC with SoundJam MP. Better yet, connect your Mac to a stereo and annoy the neighbors.

THE LAST RESORT

If you don't have the space or inclination to keep an old Mac around, consider these alternatives before tossing it in the trash like a good-for-nothing read-me file.

SELL THE SUCKER

No matter how old or decrepit your Mac, plenty of people would love to buy it from you for the right price. Your best bet for fetching top dollar is to put it up for auction on a site such as eBay (http://www.ebay.com). Make sure to list every item you're including with it (software, peripherals, manuals, and so forth), and don't forget to reveal any known problems.

DONATE THE DOG

Beggars can't be choosers, and local schools and nonprofit organizations are often happy to take old computers off your hands. Even a lowly Mac Plus is fine for basic tasks such as word processing or tracking students' grades. Don't forget to check with your family first. A secondhand Mac with a simple drawing program is a great gift for a small child, and even the family chef might use a Mac in the kitchen if you load it up with a nice recipe program.

CANNIBALIZE THE CARCASS

Even a dead Mac has plenty of pieces you can salvage to give new life to another machine, such as RAM modules, hard drives, floppy disk drives, NuBus and PCI cards, CD-ROM drives, and external monitors. When you tear apart an old Mac, keep track of each piece's specifications (that is, the memory speed or the drive's bus type) so you can be sure they're compatible with the eventual recipient. If your donor Mac is of the Classic design (Mac 128K, Plus, SE, and so on), keep the case, which you can turn into a lamp, aquarium, or terrarium (for details, see http://www.macaquarium.com).

Formerly *MacAddict*'s *Ask Us* columnist, Owen W. Linzmayer (owl@bigfoot.com) is the author of *Apple Confidential: The Real Story of Apple Computer, Inc.*, now available in English, German, and Japanese editions (No Starch Press, 1999).

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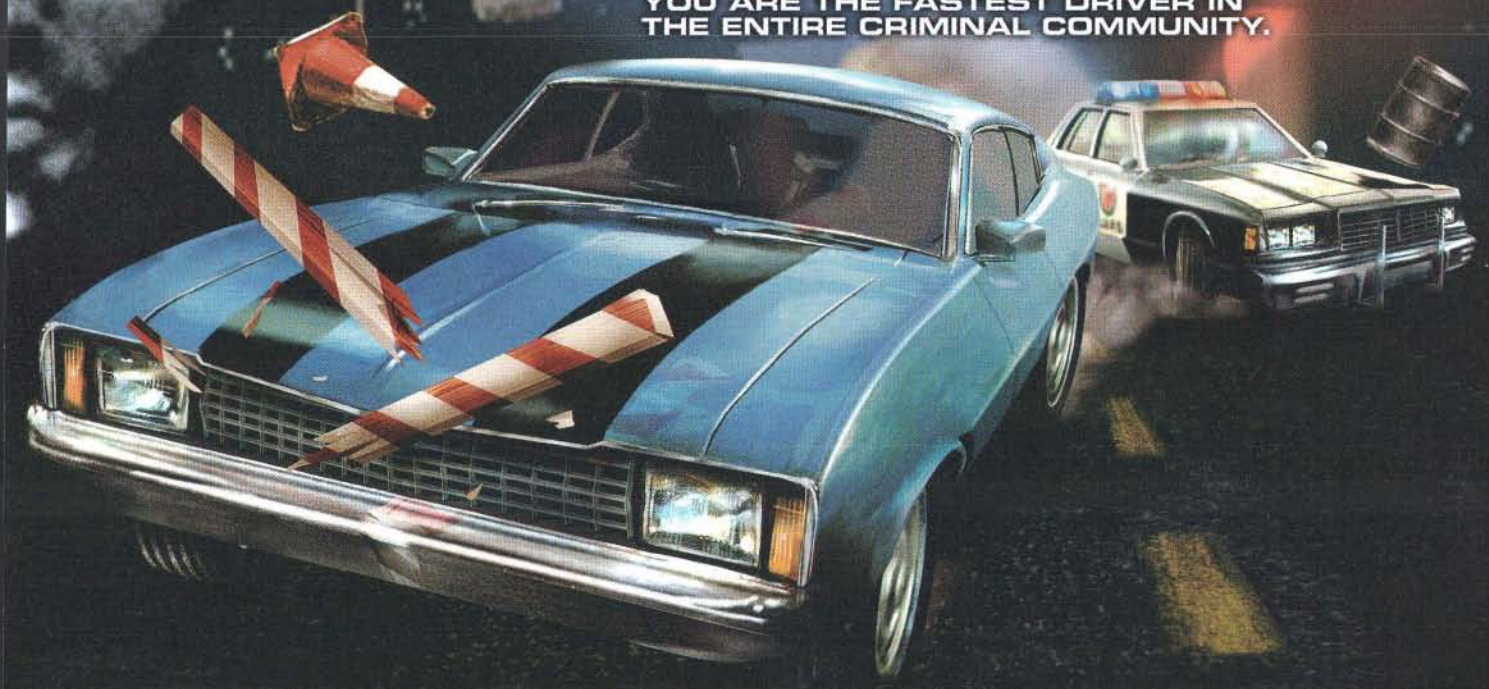
YOU ARE THE FASTEST DRIVER IN THE ENTIRE CRIMINAL COMMUNITY.



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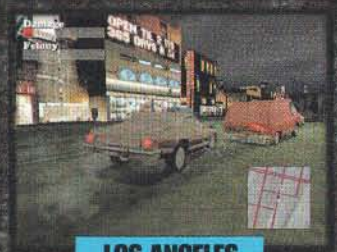
Film your own classic 70's car chase using incredible Director-Mode.



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Surveillance. Tailing. Deliveries. Heists. And serious 70's muscle cars.

MIAMI

Getaway through real pedestrians, traffic signals, traffic...and cops!

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No tracks. Just 4 sprawling urban downtowns from NY to San Fran.

Get behind the wheel with a cool pair of fuzzy dice and enter to win a boss radio-controlled GTO! For details on how to get this smokin' deal, check out:

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www.mac-o-rama.com

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REFLECTIONS INTERACTIVE

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COMING SOON FOR THE MAC!

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reviews

April showers bring May power. Now, if only it would stop raining.

G4 Upgrade Cards

HARDWARE

FREAKIN' AWESOME
The most valuable products, the coolest gizmos.

SPIFFY
A solid offering. Overall a good investment.

YEAH, WHATEVER
A few good features, but generally a waste of time and money.

BLECH!
We hate to even blotch our pages with the thing.

WE LOOK HARD for great Mac products to tell you about. Let us know what you think at http://www.macaddict.com/debate.

Building a G4 at about half the price of buying a new one is an attractive proposition. We tested and retested four G4 upgrade cards and found that the process can be challenging, and that not all cards work exactly the same way—or perform equally well. New Technologies' MaxPowr G4 ZIF won our fancy, but read on for the real deal.

Encore G4

COMPANY: Sonnet Technologies
CONTACT: 949-261-2800 or 800-786-6260, http://www.sonnettech.com
PRICE: $799 (street)
REQUIREMENTS: Power Macintosh G3 or later with ZIF socket

Mach Speed G4z

COMPANY: XLR8
CONTACT: 770-564-5682, http://www.xlr8.com
PRICE: $799 (street)
REQUIREMENTS: Power Macintosh G3 or later with ZIF socket

MaxPowr G4 ZIF

COMPANY: Newer Technologies
CONTACT: 316-943-0222, http://www.newertech.com
PRICE: $749 (street)
REQUIREMENTS: Power Macintosh G3 or later with ZIF socket

PowerForce ZIF G4

COMPANY: PowerLogix
CONTACT: 316-612-0532, http://www.powerlogix.com
PRICE: $850 (SRP), $799 (street)
REQUIREMENTS: Power Macintosh G3 or later with ZIF socket

Ever since Apple mounted Power Mac processors on a removable daughterboard instead of a soldered motherboard, CPU upgrades have become almost a right rather than a kludgy hack. When removing a processor requires only moderate pressure and a smattering of technical knowledge, it's only logical to make faster, better processors to plug into that slot—which brings us to the current crop of G4 upgrades. These cards replace the G3 processor, which sits in a ZIF, or zero insertion force, socket. They promise new life and power for G3-based desktop Macs.

We tested four G4 ZIF upgrades to see if they met the challenge. The verdict? They did—in some cases (see "Should You Upgrade?" below). We found a mix in terms of problems and performance. Physically installing the cards was simple, with the Encore card the easiest. This is the only card without any jumper switches (for control of processor and bus speed), so you can't get any settings wrong. The others had a variety of switches, jumpers, and dials to set, but figuring them out was pretty simple, and the documentation was clear in all cases. Basic installation went like this: Install the software, shut down, and install the card. Then just reboot to enjoy new speed—or so we expected.

Getting the cards to work properly was an adventure. We tested them in three different G3s, but only two cards—the Encore and the MaxPowr—reliably booted all the Macs. The PowerForce card booted one Mac but then locked up, and the Mach Speed card wouldn't boot another test Mac at all (however, XLR8 provided a replacement for the balky card that worked just fine). After several days of trying, we gave up and relied on benchmarks taken with a third Mac that would boot all four cards.

The key to upgrading a G3 to a G4 isn't megahertz, although these cards run at a respectable 400MHz. Rather, the key is AltiVec (or Velocity Engine, as Apple likes to call it). AltiVec speeds up certain functions—mostly relating to graphics, video,

Should You Upgrade?

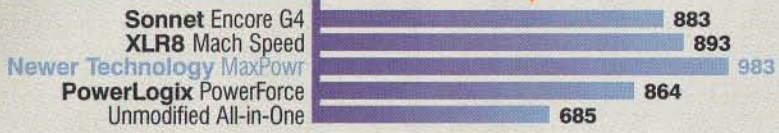
The question invariably comes up over donuts and coffee: Should folks upgrade the processors in their Macs at all? Just because you *can* remove the processor from the motherboard and insert a faster, newer processor, does that mean you *should?*

Consider this: At $800 a pop, G4 upgrade cards are pretty pricey. In fact, that sticker price puts you halfway to a genuine Power Macintosh G4 with a 400MHz chip already built in. If you buy new, you also get brand-new equipment (complete with a warranty), the latest implementations of FireWire and USB, 2X AGP graphics with a killer Rage 128 graphics card, a 10GB hard drive, and DVD-ROM (plus a whole lot more). Given the economic facts, and just plain weird problems we encountered when swapping processor cards, buying a whole new G4 is worth considering.

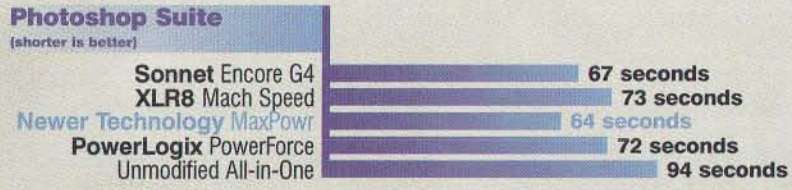
If you have a huge investment in RAM, SCSI disks, ADB devices, or other peripherals that would be tough to bring over to a new Mac, or if you just can't afford to plunk down an additional $800 (after all, that's a pretty big sum of money), then you *should* consider an upgrade card. Once you install the card and it is working properly, it can give an old Mac years of additional life—and a great speed boost, too. Just make sure you're clear on the card's return policies in case it doesn't work properly. You'll always want an out in case you plug in that shiny new G4 and your Mac won't boot.

And the Winner Is...

System Info
(longer is better)



Photoshop Suite
(shorter is better)



* Note: We were unable to complete all sets of benchmark tests on all three test machines due to technical difficulties. All completed tests were consistent with these results.Tests consisted of the Norton Utilities for Macintosh System Info benchmark suite and a series of Photoshop filters—some with AltiVec enhancement, some without.

and audio. So we checked out the cards using a mix of AltiVec and non-AltiVec tests. Aside from the benchmark suite we ran to test the cards' performance (see "And the Winner Is..." above), we also encoded some MP3s from CD using Casady & Greene's SoundJam, which takes advantage of AltiVec. Those tests showed roughly equivalent performance between the upgrade cards when ripping songs from CDs.

The MaxPowr upgrade card showed a significant performance advantage over the other cards—and that just shouldn't happen. After all, the cards are basically the same device: a G4 chip running at 400MHz, with 1MB of backside cache running at 200MHz. Differences should be minimal. After doing some delving, we came to the conclusion that the speed difference isn't a result of the hardware—it comes from the software. Newer did the best job of writing drivers for its G4 upgrade cards. When we tested the MaxPowr card with the PowerLogix drivers (neither company supports or recommends this, so don't try it), the MaxPowr's performance decreased until it almost matched that of the PowerLogix card. Drivers really do make a difference—Newer seems to have been able to squeeze the most performance out of the G4 with their card's drivers.

G4 upgrades are great for folks who have an investment to protect and aren't ready to make the leap to the current crop of G4s—you can use these cards to upgrade G3-based Macs that are less than a year old. The MaxPowr card had the best combination of low price, high performance, and reliability. Although the Encore card wasn't quite as fast (or as cheap), it was a breeze to install and we encountered no problems while using it. If you must upgrade rather than buy a new Mac outright, consider the MaxPowr or Encore cards. The other two cards experienced problems we could neither explain nor correct.—*David Reynolds*

Sonnet Technologies Encore G4

GOOD NEWS: Easy installation. Great performance. No glitches.
BAD NEWS: May not satisfy the needs of those who want to overclock.

XLR8 Mach Speed G4z

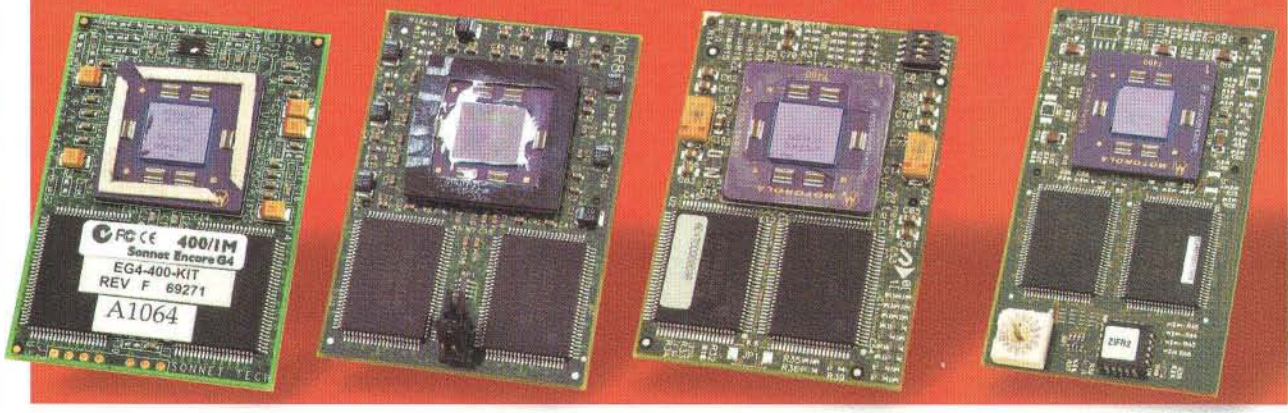
GOOD NEWS: Tons of tweakable settings—great for overclocking experiments. Lots of software on CD.
BAD NEWS: Failed to boot one of our test Macs—replacement did just fine, though. Mixed performance.

Newer Technologies MaxPowr G4 ZIF

GOOD NEWS: Easy installation. Great performance. Tweakable settings for those who can't leave well enough alone.
BAD NEWS: What bad news?

PowerLogix PowerForce ZIF G4

GOOD NEWS: Comes with LinuxPPC on CD, which makes for one fast server.
BAD NEWS: Lackluster performance. Would not boot properly with one of our test Macs.



PHOTOGRAPHS BY AARON LAUER

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Sid Meier's Alpha Centauri

FUN & GAMES

COMPANY: Aspyr Media
CONTACT: 888-212-7797 or 512-708-8100, http://www.aspyr.com
PRICE: $49.95 (SRP)
REQUIREMENTS: Power PC 603e at 150MHz or faster, Mac OS 7.5.3 or later, 16MB of RAM (32MB recommended), 157MB of hard disk space, 4X CD-ROM, color monitor, QuickTime (included)

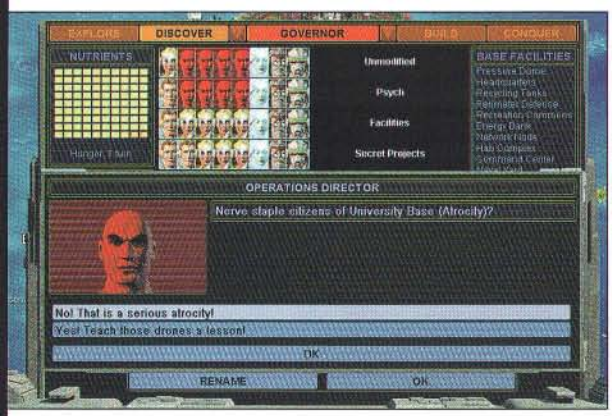
WOULD-BE WORLD CONQUERORS can shape the land to their needs.

In its infinite wisdom, humankind has pissed its future away and now looks to the stars for salvation. Humanity packs its citizens onto a huge ship (ironically dubbed the *Unity*) for what turns out to be the zaniest space ride since cartoon cutie Josie took her Pussycats into cold, dead realms in a phallic-shaped wonder craft.

Things go badly for the *Unity*. Seven little Hitlers emerge, each guiding a faction. None of the parties involved wants anything to do with a Coke and a smile, and when the *Unity* lands on the planet Chiron, the hurting and the killing start all over again.

Guns, Butter...or the Shiv?

Normally, we're bears for fair play and all that nonsense, but this, dear friends, is war. To shiv the opposition properly, send out scouts to explore the terrain and recover *Unity* pods. Employ terraforming units to create forests, roads, and other improvements. You can build colony bases, which tap the land to create new cities and quickly expand an empire—use these whenever possible. Lastly, remember this simple piece of wisdom from Conan the Barbarian: The greatest thing in life is to crush your enemies, see them driven before you, and hear the lamentation of the women. (Well, maybe not that last part.—*Ed.*)



THE UNITED NATIONS doesn't look highly on punishing the citizenry.

IF YOU BUILD IT...The game's technology allows for powerful weapons, terraform improvements, and biological manipulation.

Fans of the turn-based, civilization-building genre will stand and cheer at the mere mention of Sid Meier's name. He cobbled the dense and magnificent epic Civilization (and its sequel Civilization II), and now he's hit his highest note yet. His Alpha Centauri was a masterwork when released for PCs in the 20th century, and time hasn't spoiled the vintage. The best turn-based strategy game ever makes the jump to the Mac with only one hitch—the game performed wonderfully on a Power Macintosh G3, except for the annoying tendency of sound samples to continue playing even after a proper cutoff.

Players must select which faction they'll lead to glory. Each group has its own particular strengths and weaknesses; the religious extremists have the advantage of fanaticism and gain an attack bonus when assaulting their enemies. They suffer in the area of pure research, though, and treat their surroundings with a brutal authoritarianism that's ultimately destructive to the planet.

Alpha Centauri eschews flashy graphics for undiluted, civilization-building, brain-bending strategy. The character, building, and weapon sprites are competently rendered, if a bit simplistic, and the game runs fine without any sort of graphics card. There are literally hundreds of facilities, secret projects, and crafts to build. A ruler can tweak and modify every single unit his (or her—Alpha Centauri is very much the equal opportunity offender) empire creates. By modifying different craft frames, weapons, shielding, reactors, and special abilities, an emperor can conjure up everything from a lowly scout speeder to an ass-kicking aerial attack ship.

A nice multiplayer option comes with the game, but the turn-based play seems ill-suited to the fantastical goings-on in Centauri. Players will find themselves waiting (and waiting) for the other emperors to finish—why bother? The single-player mode is excellent.

Though the game seems to suffer, at least initially, from the same inexplicable limits that plagued the characters of *Gilligan's Island*—why can you build terraforming equipment, but not a lousy boat?—the intrigue keeps you playing long past the time when the old brain cells scream for sleep. You can win the game by battle, diplomacy, economic dominance, or evolutionary transcendence. And the razor-sharp AI makes it possible to negotiate with, bully, and cajole your computer-controlled foes.—*Greg Orlando*

GOOD NEWS: Wonderful strategy-based play. Endless options and replay value make for an all-time classic. BAD NEWS: Minutiae-minding may bore the pants off anyone weaned on a steady diet of Schwarzenegger action flicks.

Visor Deluxe

FUN & GAMES

COMPANY: Handspring
CONTACT: 888-565-9393 or 650-230-5000, http://www.handspring.com
PRICE: $249 (SRP)
REQUIREMENTS: PowerPC, Mac OS 8.1 or later, USB port, CD-ROM

PHOTOGRAPH BY AARON LAUER

ORANGE YOU GLAD the Visor Deluxe doesn't need a separate MacPac?

There's nothing like a little free-market competition. When Handspring introduced its Visor line of handheld organizers, it brought lower prices to everyday people. Cheap doesn't necessarily mean good, but in the case of the Visor Deluxe, Handspring has packed in a lot of options for the price. Perfect for personal use, slightly less so for business planning, the Visor Deluxe is a powerful little device.

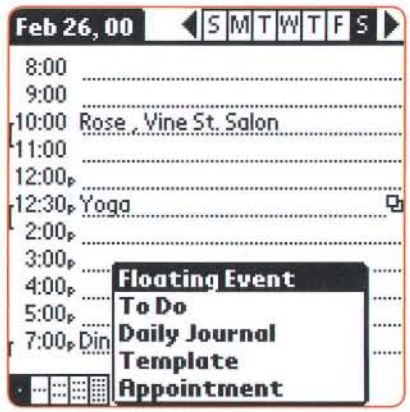
Handspring licenses the Palm OS, so its devices and desktop software basically work like the Palm's. The Visor Deluxe comes with 8MB of RAM, which Handspring says can hold 12,000 addresses, ten years of appointments, 6,000 to-do items, and 6,000 memos. You can expand storage capacity with an 8MB Flash Module for an additional $79.95.

Since Palm dropped the prices on its handhelds, Handspring can no longer compete on the basis of cost alone, so it's banking on the Visor's one unique design feature: the Springboard expansion slot on the top of the device. Third-party developers producing the modules promise that your handheld will have expanded memory, Internet access, and the power to become a gaming machine, an MP3 player, and even a digital camera.

Problem is, in only a handful of cases has that promise turned into commercially available products. At press time, Handspring's site offered just three hardware modules for purchase: Backup, Flash, and Electronic Arts' Tiger Woods PGA Tour Golf module, which slides in like a Game Boy cartridge. Third-party developers have announced many more, available soon (see "Totally Modular" below). While you're waiting, you can download an eclectic variety of ebooks, games, and shareware apps created for the Palm OS.

The Visor Deluxe still runs with the Palm OS 3.1. When Palm releases OS 3.5, Handspring says it will upgrade upcoming hardware modules for compatibility. Handspring's customized Date Book+ already includes some of 3.5's features. Date Book+ lets you schedule more types of appointments—journal entries for time-stamped events, to-do items, and (our favorite) floating events. The last carries over to the next day until you mark them completed: an irritating but handy feature for procrastinators.

As opposed to the serial-driven Palms, Visors are USB by default. One dark shadow tarnishes this shining feature: If you're a Mac user, you can't download email onto a Visor without purchasing a third-party conduit. So while the Visor Deluxe is great for personal planning, it's less than ideal as a business tool. Another gripe concerns aesthetics. The Visor Deluxe is bulky, and the snap-off plastic lid is clunky compared to the Palm's flip-up style. The screen occasionally didn't respond to the stylus. Resist the urge to stab with your stylus—instead, try short, crisp pecks at a different angle.



SPONTANEITY IS OUT. Plan your anal-retentive Saturday with Date Book+.

Infrared beaming works the same as it does on a Palm. And if your friends are Palm users, you can exchange information with them—no problem. You *will* run into a problem if you're sharing a desktop computer with a Palm user. We encountered an incompatibility between the Palm and Handspring desktop software drivers that caused our iMac DV to crash on startup with both sets of software installed. (For more on Palm versus Handspring, see "*MacAddict* Super Product Slugfest," this issue, p26).

The Visor Deluxe is a great organizational tool for managing your entire personal life, along with parts of your professional life. If we could get our hands on more of those third-party modules and if we could download our email with the Visor, this device would be *Freakin' Awesome.* Till then, it's just way cool.—*Narasu Rebbapragada*

GOOD NEWS: Great multifunction potential. Date Book+ rocks.
BAD NEWS: Cumbersome design. Can't download email.

Totally Modular

Just to whet your appetite, here's a smattering of Springboard modules that should be available later this year.

Product	Company	Available
MiniJam MP3 player	Innogear	Q2 2000
GPS radio module	Navicom	Q1 2000
Eyemodule digital camera	IDEO	Spring 2000
Radio	Cue Corporation	Spring 2000
Cordless phone platform	Zilog	Q3 2000

reviews

PhotoMontage 2000

GRAPHICS & SOUND

COMPANY: ArcSoft
CONTACT: 800-762-8657 or 510-440-9901, http://www.arcsoft.com
PRICE: $39.99 (SRP)
REQUIREMENTS: PowerPC, System 7 or later, 24MB of RAM, 20MB of free hard disk space, CD-ROM drive

PhotoMontage 2000 is a one-trick pony—the application creates a fascinating "photo mosaic" picture of your favorite photograph in a matter of minutes. From a distance, it's a Pointillist representation of a photograph. Up close, it's actually composed of tiny, repeated images arranged by color and density.

We selected a photo for the montage, cropped it, adjusted the contrast and brightness, and set a few mosaic parameters, such as the number of photos to use and the stacking criteria. You can choose up to 1,000 individual images to create your montage, and ArcSoft supplies more than 20,000 on the CD. The processor-intensive conversion took 2 minutes on our 400MHz G3.

However, one part of PhotoMontage that might slow you down is its nonstandard interface. It offers no menu bars, dialog boxes, or obvious ways to quit the application. You may also need to turn on virtual memory for complicated images—we had to bump up PhotoMontage's RAM allocation to 50MB.

PhotoMontage 2000 may offer just one trick—but oh, what a trick!—*Joseph Holmes*

Tip
Turn your photo mosaic into a desktop picture. Just save your work as a PICT, then drag the file from the desktop onto your Appearance control panel.

GOOD NEWS: Groovy mosaic photos. Loads of fun. BAD NEWS: Eats up RAM. Nonstandard interface.

WE TRANSFORMED this photo...

...into this montage...

...using these images.

Street Atlas USA 6

PRODUCTIVITY

COMPANY: DeLorme Mapping
CONTACT: 800-452-5931 or 207-846-7000, http://www.delorme.com
PRICE: $49.95 (SRP), $34.95 upgrade from any previous version; $149.95 with Earthmate, $124.95 upgrade with Earthmate
REQUIREMENTS: PowerPC, Mac OS 8 or later, 16MB of RAM, 50MB of free hard disk space, CD-ROM drive

STREET ATLAS drives us crazy—clumsy controls and questionable data counter its amazing, detailed street-level directions.

Street Atlas USA creates colorful maps of the entire United States, showing towns, roads, bodies of water, and other important geographic features. New in version 6 are updated map data, support for GPS devices, and detailed driving directions. Unfortunately, the program's flaws—carried over from previous versions—offset these goodies.

The basic operation of Street Atlas USA remains the same. You can still zoom on a particular section of the country by entering a telephone number, a zip code, a city name, or even a house address. The response time is phenomenal, but the interface is clumsy and confusing.

The best new feature is Routing, which provides driving directions between locations, across the country or just through town. You can request the quickest, shortest, or most scenic route, and even specify the type of road you would prefer. Likewise, you can specify stopping points along the way. You may need the EarthMate GPS receiver (sold separately) when you discover the inevitable inaccuracies (such as through roads that don't connect) that creep into a product with such a tremendous wealth of data.

No other Mac product in this arena compares to Street Atlas USA, so if you need street-level mapping, by all means pick up a copy today. We just wish DeLorme had made the program easier to use—and to trust. —*Owen W. Linzmayer*

GOOD NEWS: Inexpensive. Fast searches and redraws. Driving directions. GPS support.
BAD NEWS: Frustrating non-Mac interface. Scant printed documentation. Questionable geographic accuracy.

Elite 12/600 USB

HARDWARE

COMPANY: GCC Technologies
CONTACT: 800-422-7777 or 781-275-5800, http://www.gcctech.com
PRICE: $799 (SRP)
REQUIREMENTS: Mac OS 8.6 or later, one free USB port

LARGE, POWERFUL AND FLEXIBLE to use—the Elite 12/600 is a nice piece of hardware.

PHOTOGRAPH BY AARON LAUER

For a long time, a printer that was PostScript-compatible *and* low-cost fell into the realm of the urban legend. Though the pickings are still slim, we found one that truly exists—and that satisfies us, too. The Elite 12/600 USB is the new USB version of GCC Technologies' venerable laser printer based on the Fuji Xerox Mario P893 printer engine (the same one you'll find in the Apple LaserWriter 12/640). It's a very flexible workhorse, perfect for demanding home and small office users who need sharp PostScript printing.

The Elite 12/600 is a relatively large printer, measuring 9 by 16.3 by 16.6 inches and weighing 30 pounds. There's a lot of power in this package, justifying its size. The back panel contains USB and parallel ports, both active simultaneously. Since the printer is smart enough to switch between emulated PostScript Level 2 and PCL 5 (Hewlett-Packard's Printer Command Language) modes, you can connect an iMac to the USB port and a Windows machine to the parallel port and print from both at the same time. To share the printer with multiple computers, just connect it to a USB hub. An even better networking solution, however, is the Elite 12/600 N model. It costs $50 more and includes a 10BaseT Ethernet connector.

We experienced installation glitches while connecting the Elite 12/600 to a Power Mac 7600 with a Keyspan USB card. GCC's technical support quickly and accurately identified the problem instead of pointing fingers. (The printer requires the Desktop Printer Utility 1.2 found in Mac OS 8.6 or later; see "Installation Tip" below.) Knowledgeable representatives and no time on hold justified our toll call.

Once we had the correct software installed, the printer worked like a champ—in part because it uses Apple's own LaserWriter 8 driver, reducing the likelihood of compatibility issues. Though the printer doesn't use true Adobe PostScript, we didn't have any problems, even when printing complex PageMaker documents with multiple fonts, embedded graphics, and EPS images. The printer's standard 8MB of memory can expand to 64MB to handle demanding documents and downloadable fonts. The 50MHz AMD 29040 RISC processor cranks out up to 12 razor-sharp pages per minute, thanks to the true 600-dpi print resolution and GCC's AccuGray technology, which ensures consistent halftones regardless of line frequency or resolution.

The Elite 12/600 offers impressive paper-handling options, too. It comes with a universal tray that can hold 250 letter, A4, or legal cut sheets (16 to 36 pounds); labels; or overhead transparency film with an edge-to-edge printable area of 8.5 by 14 inches. Furthermore, a multipurpose tray folds out of the front to hold an additional 80 sheets of paper or ten envelopes. If that's not enough, you can attach another tray that holds either 250 or 500 sheets, or 50 envelopes. You select between these paper sources in the Print dialog box. Furthermore, the printer has a straight-through path option, ideal for heavy stock.

The only consumable in the Elite 12/600 is the toner cartridge, capable of producing more than 6,000 letter-size pages. Because this cartridge also includes the photoreceptive drum and electrostatic components, GCC does not recommend refilling with toner. Replacement cartridges cost only $114, however, which works out to less than 2 cents per page—far more economical than most ink-jet printers.

The Elite 12/600 USB would be perfect if not for the installation snafus, which the manual doesn't address, and the fan's constant whirring. We wish the printer had a low-power, low-noise sleep mode. If you need the speed, power, and precise printing only a PostScript-compatible laser printer can deliver, the Elite 12/600 is as capable as it is versatile, and relatively inexpensive, too.—*Owen W. Linzmayer*

GOOD NEWS: Relatively inexpensive. Supports simultaneous connections. Handles PostScript and PCL. Fast. Superb print quality. Flexible paper handling options. Economical consumables.
BAD NEWS: Noisy fan. Tricky installation.

Installation Tip

To use the Elite 12/600 USB, you must install Apple's Desktop Printer Utility 1.2 (the first version compatible with USB printers), available only as part of the full Mac OS versions 8.6 and later on the installation CD. The free Mac OS 8.6 update on Apple's support site doesn't include this component, nor is it available as a separate download, as far as we can determine. Inexplicably, Apple refuses to license this program to GCC or other third-party manufacturers.

To install Desktop Printer Utility 1.2, launch Mac OS Install on your Mac OS CD. Click Continue, select your hard drive, and click Add/Remove if necessary. Select only the Mac OS 8.6 or 9 component, then choose Customized Installation from the pop-up menu. Deselect all the other features and toggle the Printing Disclosure triangle. Select the Desktop Printer Menu, Desktop Printing, and LaserWriter 8 check boxes and click OK. When the installation finishes, you should have the required version of Desktop Printer Utility on your hard drive. Now you can follow GCC's installation directions.

reviews

iRez KritterUSB

PHOTOGRAPH BY AARON LAUER

THIS ITSY-BITSY CRITTER perches on your laptop and captures stills and short videos.

HARDWARE

COMPANY: PAR Technologies
CONTACT: 480-922-0044, http://www.irez.com
PRICE: $129.95 (SRP)
REQUIREMENTS: Power PC G3 or faster, Mac OS 8.6 or later, 32MB of RAM, USB interface

PAR Technologies has created the ultimate USB accessory. The iRez KritterUSB color video capture camera sits perfectly perched atop an open PowerBook or iBook, with its cute little eyeball staring down at you. It works with any Mac that has a USB port and it comes in orange, blue, ice, and black. But the KritterUSB may flaunt more form than function if you're looking for more than just videoconferencing capabilities—considering its disappointing software package, slow video capture, and steep price for its class.

To install the KritterUSB camera, simply plug it into any available USB port. It draws power from the USB bus, so plug it into the computer or a USB hub, not into the keyboard. The short, three-foot cable is ideal for a laptop, but creates a difficult stretch from the port to the top of a desktop monitor. The camera has a removable base and uses a standard tripod screw mount. Interestingly, if you swivel the Kritter's stand backward, you can clamp it to the front handle of a blue-and-white G3 or even a G4. Plus iRez sells a special stand for mounting the camera on a monitor or even an iMac.

GETTING ACCURATE COLOR poses quite a challenge for the KritterUSB—this sweater should be bright red!

If your purpose is videoconferencing and you use a laptop, the KritterUSB is a perfect tool. The package includes a working version of the iVisit videoconferencing software. Still in beta, it's available free at the iVisit Web site (http://www.ivisit.com)—and already it's a wonderful technology. We installed and configured iVisit easily, then set up a connection to some friends. In addition to using KritterUSB as a videoconferencing or Web cam tool, you can use it to capture short QuickTime videos or even still images. Since it fits so well on a laptop, it also makes a nice mobile video capture device.

VIDEOCONFERENCING has never been so easy and so fun as it is with the KritterUSB and iVisit software.

Unfortunately, the KritterUSB's captured images turned out grainy and unclear. At 320 by 480 it could capture close to 30 frames per second, but at 640 by 480 it struggled to capture 10. We really expected better quality for a camera that costs more than most equivalent devices. Kensington and Logitech both have similar color USB video cameras for between $50 and $80.

As for software, iRez includes a copy of Reel-Eyes, its own video-capture software—but this turns out to be a big disappointment. Reel-Eyes can capture 320 by 480 and 640 by 480 at a decent frame rate, but makes adjusting the image much too difficult. The color was far from accurate and the image never really came clear, even when we used the camera's manual focus. Brighter light only slightly improved image quality. The package bundles a few other applications, including two Web cam packages, Oculus and CoolCam, which work well and offer a nice purpose for the camera. KritterUSB also includes a multimedia cataloging program called iView Multimedia and a video analysis application called VideoScope. These are all unregistered shareware programs, which anyone can download from the Web, and you still have to pay a fee to use them. It would have been nice for iRez to include at least one bundled program that doesn't require you to pay more money for actual use.

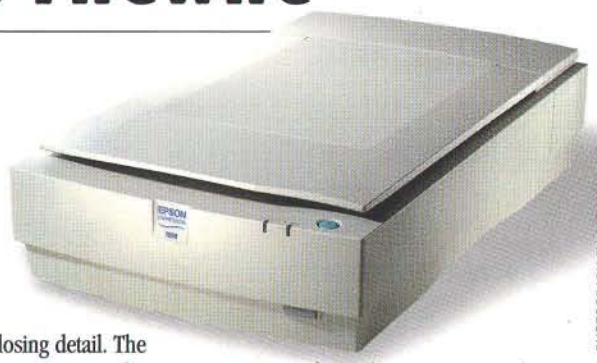
We really wanted to like the KritterUSB, because it is one of the coolest-looking Mac products to come out in years. Unfortunately, its main purpose is to capture video, and it just doesn't do this well enough to live up to its outstanding industrial design. If you need a USB video camera specifically for your PowerBook G3 or iBook, this is a great choice. Otherwise, you'll find better options out there.—*Buz Zoller*

GOOD NEWS: Excellent videoconferencing solution for PowerBooks and iBooks. Works with other video applications. Looks cool.
BAD NEWS: More expensive than similar products from Logitech and Kensington. Poor video quality. Awkward design for desktop use. Bundled software package includes unregistered shareware.

Expression 1600 Pro FireWire

HARDWARE

COMPANY: Epson
CONTACT: 800-463-7766, http://www.epson.com
PRICE: $1,399 (SRP)
REQUIREMENTS: SCSI (OS 7.5 or later), USB (OS 8.1 or later), or FireWire (OS 8.6 or later with FireWire update 2.1); 32MB of RAM; 50MB of free hard disk space; CD-ROM drive



PHOTOGRAPH BY AARON LAUER

THE EXPRESSION 1600 doused our FireWire expectations like a wet blanket.

For the price of a low-end G4 or a cheap car, one would hope a scanner costing $1,400 would be pretty darn special. Unfortunately, we're still trying to figure out what exactly *is* special about the Expression 1600.

With the ability to scan up to 1,600 by 3,200 dpi, the Expression 1600 is one of the first FireWire-ready scanners to hit the market. We envisioned the Expression scanning 1,600-dpi image after 1,600-dpi image like some sort of superscanner on amphetamines. The reality? Unfortunately, FireWire's supposedly blazing speed seemed more on par with Miss Daisy than with Jeff Gordon (see "Is FireWire All That?" below).

Aimed at high-end graphics users, the Expression 1600 does have many nice features for designers. It has a transparency unit and offers great versatility by allowing users to connect via SCSI, USB, or FireWire.

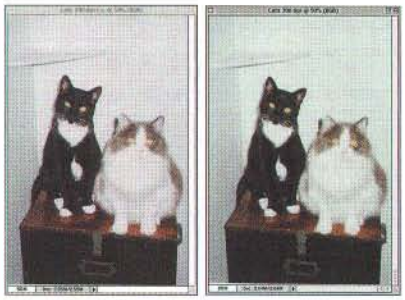
In terms of scanning quality, the Expression 1600 performs quite well, allowing users to scan up to 1,600 optical resolution and as high as 12,800 dpi interpolated. Color and contrast come through nicely—colors are rich and vibrant, and stay fairly true to the original (although they fall short in comparison to a drum scan). Whites and blacks scan well without washing out or losing detail. The only compromise in quality comes in the sharpness—scans tend to look soft rather than crisp and clear. Epson claims, however, that it made an intentional decision not to make the default scans sharp, to let people manipulate photos themselves in Photoshop.

The ability to set the scanner up on a network excited us initially—until we read the fine print: "The scanner server must be turned on and running Epson Scan Server (PC only)." Client computers can be either Mac or PC, but the actual server must be a Windows machine, thus rendering this scanner completely unnetworkable in a 100 percent Mac environment. Shameful.

Besides the transparency unit, the FireWire Pro model comes with a bunch of software (nothing too impressive), including Epson Twain Pro scanning software, Twain Pro for Networks, Photoshop 5.0 LE, MonacoEZcolor 1.5, Presto PageManager, and TextBridge Classic OCR software. The Expression 1600 also comes in lesser models, including the Special Edition (just scanning software, no FireWire), Artist (all the software, no FireWire), and Pro (all the software, a transparency unit, no FireWire). But even those seem pricey, with the least expensive bundle starting at $799.

The bottom line? For $1,400, you want to get a *killer* scanner. You want lightning-fast speeds that fulfill the promise of FireWire. You want brilliant scan quality. And you *don't* want to see the words "PC only" in your manual. Compared to all those feisty 1200 dpi scanners selling for $250, the 1600, in the end, really doesn't seem worth the extra dough.—*Cathy Lu*

GOOD NEWS: High scan quality. Rich and vibrant color. Ability to connect to SCSI, USB, and FireWire.
BAD NEWS: FireWire speeds are a letdown. To network the scanner, you must serve it on a PC. Pricey.



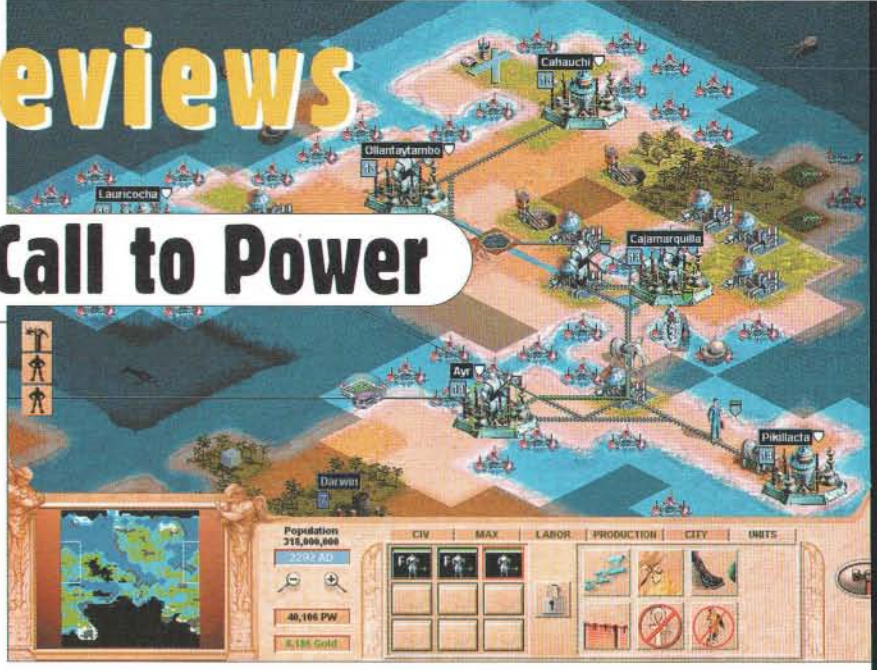
BLACK CAT, WHITE CAT, skinny cat, fat cat. The two cats demonstrate feline extremes, as well as the difference between cheaper scanners (left) and the Expression 1600 (right). Note the more muted and less contrasting colors on the left.

Is FireWire All That?

FireWire, FireWire, FireWire. It's as cool as Marcia Brady, and it's the new rage in lightning-fast data transfer. Or is it? We put FireWire to the test by scanning a 4 by 6 photo on the Expression 1600 at three different resolutions—first using USB, then SCSI (Adaptec Power Domain Ultra 2), then FireWire. According to Epson's product manager, the company has achieved scanning speeds up to five times faster on FireWire versus USB. But try as we might (we tested FireWire speeds on three different systems), we couldn't come close to emulating Epson's figures. Here are our findings from tests on a G3/400.

Resolution	Connection	Speed	File Size
200 dpi	USB	13 seconds	2.7MB
200 dpi	SCSI	11 seconds	2.7MB
200 dpi	FireWire	11 seconds	2.7MB
1,200 dpi	USB	3 minutes, 10 seconds	96.9MB
1,200 dpi	SCSI	2 minutes, 50 seconds	96.9MB
1,200 dpi	FireWire	2 minutes, 50 seconds	96.9MB
1,600 dpi	USB	5 minutes, 40 seconds	172.2MB
1,600 dpi	SCSI	4 minutes	172.2MB
1,600 dpi	FireWire	3 minutes, 55 seconds	172.2MB

Civilization: Call to Power



THE REVAMPED GRAPHICS can't hide that Civilization feeling.

FUN & GAMES

Company: MacSoft
Contact: 800-229-2714, http://www.wizworks.com/macsoft
Price: $49.99 (SRP)
Requirements: 180MHz 603e or faster, Mac OS 7.6 or later, 48MB of RAM, 300MB of free hard disk space, CD-ROM drive

If Civilization: Call to Power proves one thing, it's just how good the original Civilization was. Ten years later, the latest incarnation differs only marginally from the first. That said, Civilization: Call to Power is a serious disappointment, and the completely revamped graphics and interface prove that new is not necessarily better. Moreover, the multiplayer game shares the underlying weakness of Civilization II: Gold. Its wildly outdated turn-based play is just as dull now as it was in the days when Strategic Conquest (http://www.deltatao.com) was the hottest thing on the block.

The basic game remains more or less the same. Rival civilizations struggle to build cities and improve their technological abilities. They can construct combat and civilian units, make civic improvements, and even create Wonders of the World. A Wonder of the World is an architectural feat that only one city anywhere can create, sparking competition between civilizations to be the first to build one. Cities can establish trade routes to help earn the gold to spend on improvements, and players can negotiate swapping of maps, knowledge, or gold with one another.

We welcome some of the changes in the newest installment. You can now create and command armies much more efficiently since you don't have to move each and every piece of a large force independently. Also, this version reworks most of the civilian units, such as caravans and engineers, so you don't waste endless amounts of time moving units around for construction and trade.

Unfortunately, Call to Power shares the greatest weakness of the rest of the Civilization series—the basic structure of the game doesn't fit the modern world as well as it does ancient times. The concept of a Wonder of the World works well in the ancient world as civilizations race to build great works like the Sphinx or the Labyrinth. In the modern world, however, Call to Power can't seem to find anything that fits this model. Instead, the game clutches at straws, resulting in oddities such as intense races to *build* the Contraception. This concept is even stranger than it might seem. Modern wonders like this one are fixed in a single city, so you can actually "capture" the Internet, for example, by conquering the city in which it was created.

The most unwelcome change to the game is the totally revamped user interface. Gone is the simple, two-dimensional map game that you can place into the background like any other application. The new interface features an isometric three-dimensional worldview that fills the screen and locks out all other processes. While the new graphics are certainly more impressive than the old, they are touchy and difficult to control. Inadvertent clicks can suddenly send units charging in wildly inappropriate directions. Moreover, this turn-based game, which can literally take days to complete, locks out any other use of your machine. This is absurd. You should be able to multitask while thinking about a move.

The new entrant in the Civilization series is a profound disappointment. If you've never played Civilization before, this game's worth a look. Otherwise, just go for Alpha Centauri.—*Ian Sammis*

GOOD NEWS: Civilization was one of the all-time best games ever, and this is still Civilization.
BAD NEWS: Vastly inferior new user interface. Some absurd units weaken the game.

What Were They Thinking?

The tools of modern warfare seem a wee bit wimpy to us.

THE SUITS: The Corporate Branch has the inexplicable power of diverting a foreign city's production to you, even if you're at war with it. The desk slides nicely along the ground, though—apparently it's on casters.

MORE SUITS: As if their egos weren't big enough, Civ lawyers can bring a foreign city's production to a screeching halt for a turn. Can you really sue wartime opponents?

SAFE SEX: Since contraception is a Wonder of the World, only one civilization at a time can practice safe sex. You can get some by grabbing the city that's enjoying itself.

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reviews

XClaim VR 128

PHOTOGRAPHS BY AARON LAUER

THIS COMBINATION of card and purple outboard video module go together like peanut butter and chocolate.

HARDWARE

COMPANY: ATI Technologies
CONTACT: 905-882-2600, http://www.ati.com
PRICE: $229.99 (SRP)
REQUIREMENTS: PCI-based Power Macintosh, Mac OS 8 or later, QuickTime 3.0 or later, QuickDraw 3D 1.5.4 or higher

In an effort to span the connection between video, television, and high-end video processing, ATI has released the ATI XClaim VR 128, a combination of a video card with video capture capabilities and an outboard TV tuner that connects to the card. The XClaim VR 128 is an update of an older product, named (amazingly enough) the XClaim VR. It is great for folks who want to watch TV on their Macs, or for those who want to delve into video editing.

Installing the XClaim VR is a two-part process that's pretty straightforward. The first part consists of plugging the PCI card into an available slot and then installing the video drivers. The second part involves connecting the XClaim VR to the XClaim TV outboard video module, a purple plastic affair with sleek curves and *lots* of ports. The instructions are easy to follow (see "Hooking It Up," below), and the package includes the cables—a welcome relief for those of us who dread yet another trip to Radio Shack.

The major difference between the VR 128 and the older ATI's VR model is that the faster Rage 128 chip powers the VR 128. The XClaim VR 128 performs solidly, but lacks truly breathtaking power (see "How Fast?" at right). On our Norton Utilities for Macintosh System Info test, the card performed significantly more slowly than the ATI Rage 128 AGP card that ships in current G4s—though both cards use the same chip. It was even a little slower than the Formac ProFormance 3, which rated closer in performance to the Rage 128 AGP. Still, the card provided rock-solid video and gameplay with no glitches and few reasons for complaint.

The XClaim TV outboard module makes the XClaim VR 128 worth the extra $80. A similar Rage Orion video card—with the Rage 128 chip set but without the video input—runs $149. This widget has a TV tuner that can handle both broadcast and cable signals (routing that into the XClaim VR 128 card), plus it has video inputs and outputs. Controlling all of this is ATI's video software—Video Player, Config Menu, the control panel, and a few Control Strip items.

All of these software bits performed adequately but lack good integration. For example, XClaim VR 128 can display video as a desktop pattern, but the Control Strip modules that control the desktop video won't show which channel you have tuned in, nor can you launch ATI Video Player from your Control Strip. The ATI Displays control panel's funky graphics would benefit from a tabbed window. Integration and user interface complaints aside, the video side of the XClaim VR 128 is solid.

The card-module combo can capture uncompressed video at 30 frames per second with a resolution of 320 by 240—good enough for those who want to delve into video on their Macs without investing in a FireWire-enabled Mac and camera.

While the XClaim VR 128 is a solid package, it's not for everyone. If all you want is a high-performance video card for your PCI-based Mac, you'll find cheaper cards out there, or more powerful cards available for the same price.—*David Reynolds*

GOOD NEWS: Solid performance. Comes with lots of extras. Video I/O works well. BAD NEWS: Performance not as high as that of other cards in a similar price range. Software packages not well integrated. Clunky interface elements.

HOW FAST?

To test the speed of the XClaim VR 128, we put it through the Norton Utilities for Macintosh System Info test. Here's how it stacks up against the Rage 128 Pro in the Power Mac G4's AGP slot. In Unreal Tournament, the Rage 128 produced a faster frame rate—a telling stat that relies more on the card's performance and less on the interface in which the card is seated.

Rage 128 AGP	
Norton Utilities System Info	619
Unreal Tournament frame rate	37
XClaim VR 128	
Norton Utilities System Info	343
Unreal Tournament frame rate	31

HOOKING IT UP

Setup can be a bit of a pain, so here's our crash course on what all the ports mean and how they hook up.

BJC-85 Color Bubble Jet Printer

HARDWARE

COMPANY: Canon
CONTACT: 800-652-2666, http://www.usa.canon.com
PRICE: $299 (SRP)
REQUIREMENTS: Mac OS 8.1 or later, G3 or G4 PowerPC, USB port

PHOTOGRAPH BY AARON LAUER

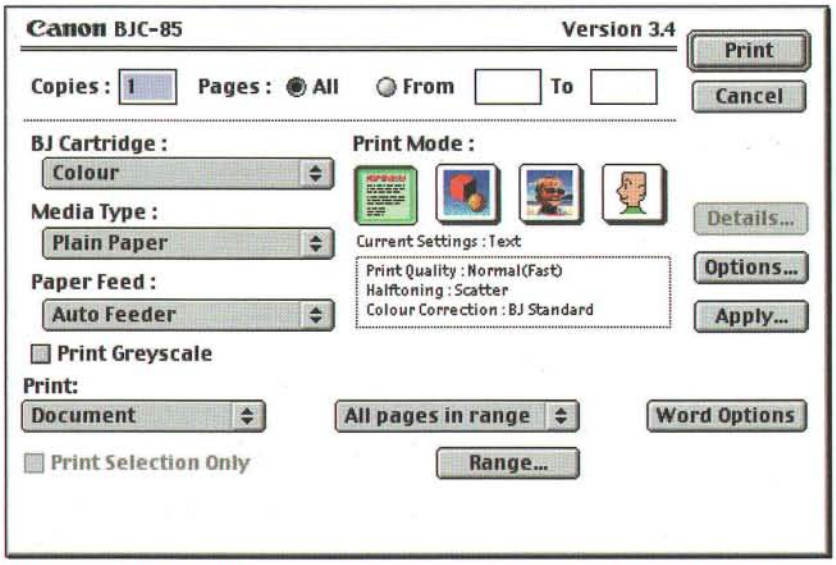
SIZE MATTERS, AND THIS TIME SMALLER IS BETTER. The BJC-85 is a good solution for your mobile printing needs.

You're a road warrior, always on the go. You carry your laptop, palmtop, cell phone, and modem with you. Now, to produce that color presentation on the fly, you can also take along Canon's supercompact BJC-85 Color Bubble Jet Printer. It isn't the fastest printer out there, but it travels well and does a good job of printing in color or in black and white.

In terms of portable printers, the smaller, the better—and the BJC-85 is petite. At 11.8 by 6.2 by 2.3 inches, it weighs just over 3 pounds. The external power supply adds another few ounces. If you don't want to be tethered to an AC outlet, you can purchase a portable battery. The BJC-85 is designed for life on the run. Its paper feeder—a fold-down lid—protects the paper intake slot and control buttons. The printer includes a separate storage unit to hold your color or black-and-white print cartridge when you're not using it.

The BJC-85 is a USB device, so setup is a snap. Run the driver installer, restart your Mac, and plug in the printer. That's pretty much all there is to it. The driver is also easy to use, equipped with presets for text, graphics, and photographs so you can get optimized output on any type of document. You'll value this feature if you hate messing around with printer and ink settings to get color charts just so.

The BJC-85 offers a lot of options for such a small printer. It supports a variety of paper types, including back-print photographic film, bubble-jet paper, envelopes, glossy photo paper, high-gloss film, high-resolution paper, plain paper, and transparencies. You can print in letter, legal, A4, A5, B5, and number 10 envelope sizes, and the feeder holds up to 30 sheets of paper, 10 transparencies, or 5 envelopes. With Canon's print driver, you can preview your job. You can also print to a PICT file, print in reverse order, print collated copies, or print proofs with two or four scaled-down previews to a page.



ALL THE PRINTING OPTIONS you can imagine are at your fingertips with Canon's printer driver, which offers everything from print-job optimization to collating.

All these options are nice, but print quality is key, and Canon made sure the BJC-85 could deliver. In black and white, this printer delivers 720 by 360 dpi for ultracrisp text and line art. In photographic color printing, it offers 360 by 360 dpi. While the BJC-85 won't provide magazine or even color-copier results, the print quality is quite good and perfectly suited to a business environment. Even with highly saturated colors such as bright reds, it shows little or no color bleeding. The BJC-85 also handles tonalities well, printing realistic color gradations and distinguishing close shades. The device is very slow, however—a full page of text takes 3 to 5 minutes, while a full-color page can take as long as 8 to 9 minutes.

If you're not a speed demon and you're looking for a highly mobile printer, the BJC-85 is a good choice. The print quality is very high, comparable to that of many desktop units, and the printer handles just about any printing surface you're likely to use. Overall, the BJC-85 is a well-designed tool for the mobile Mac user.—*Rick Sanchez*

GOOD NEWS: Very compact. Excellent print quality.
BAD NEWS: Very slow color printing.

Carrara 1.0

DESIGN & GRAPHICS

COMPANY: MetaCreations
CONTACT: 805-566-6200, http://www.metacreations.com
PRICE: $499 (SRP), $199 (upgrade) from Infini-D 4 or RayDream 4 or later
REQUIREMENTS: Power Macintosh G3, 266MHz or faster; 64MB of RAM; 65MB of free hard disk space; Mac OS 8.1 or later
RECOMMENDED: Power Mac G4, 128MB of RAM, 3D accelerator card

CARRARA ENGINEERS A FULL-SCREEN TAKEOVER with an attractive interface that hides numerous GUI kludges.

We've all known geeky types who are achingly brilliant one moment, stunningly stupid the next. It's like that with Carrara, Metacreations' new 3D modeling and animation app. Just when its many excellent features have honestly impressed you, it hits you with a gaffe so amazingly dopey you can't help but laugh.

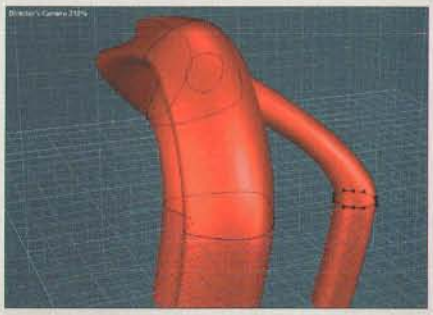
MetaCreations is currently undergoing a major restructuring to focus *only* on Web-integrated e-commerce products. MetaCreations has said it will continue to manufacture and support Carrara for now, but you may want to take the company's somewhat fragile position into consideration when purchasing this product. (For more information, see *Get Info*, Apr/00, p17.)

Carrara replaces the aging Infini-D and RayDream in Metacreations' software lineup, and it's about time. Operations take place in five rooms: the Model Room, where you build 3D objects; the Texture Room, where you texture and surface models; the Storyboard Room, for quick animation tests; the Assemble Room, where you put objects together and work out the animation; and the Render Room, for cranking out the final frames.

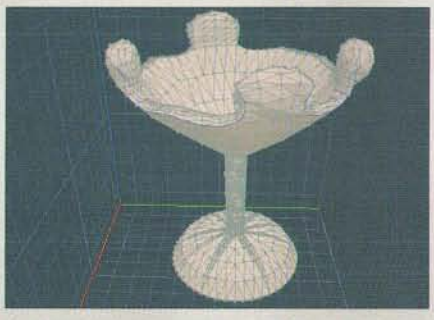
Carrara's modeling tools are impressive. You've got your choice of a spline loft modeler, a vertex modeler, and a metaballs modeler (see "Supermodelers: Three Gorgeous 3D Tools," below). There's also a terrain generator and a 3D-text creator, geometric primitives, several kinds of volumetric special effects (such as fire or fog), and particle systems. The vertex modeler offers real mesh modeling with smoothing, cutting, and welding; from a features standpoint, it's up there with Newtek's Lightwave Modeler.

The metaballs modeler works as well as any we've seen. However, you control surface threshold only on a global level—you can't adjust the attraction of individual blobs. One important feature is dynamic tessellating for splines and metablobs. When they get farther away from the camera, the polygon count decreases; closer, and it increases. This makes for maximum rendering efficiency.

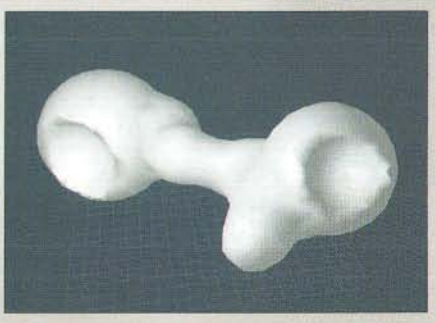
Supermodelers: Three Gorgeous 3D Tools



In the spline loft modeler, MetaCreations retains—and improves—the old spline lofting technology from Infini-D and RayDream. It's still a good choice for smooth shapes with simple curves.



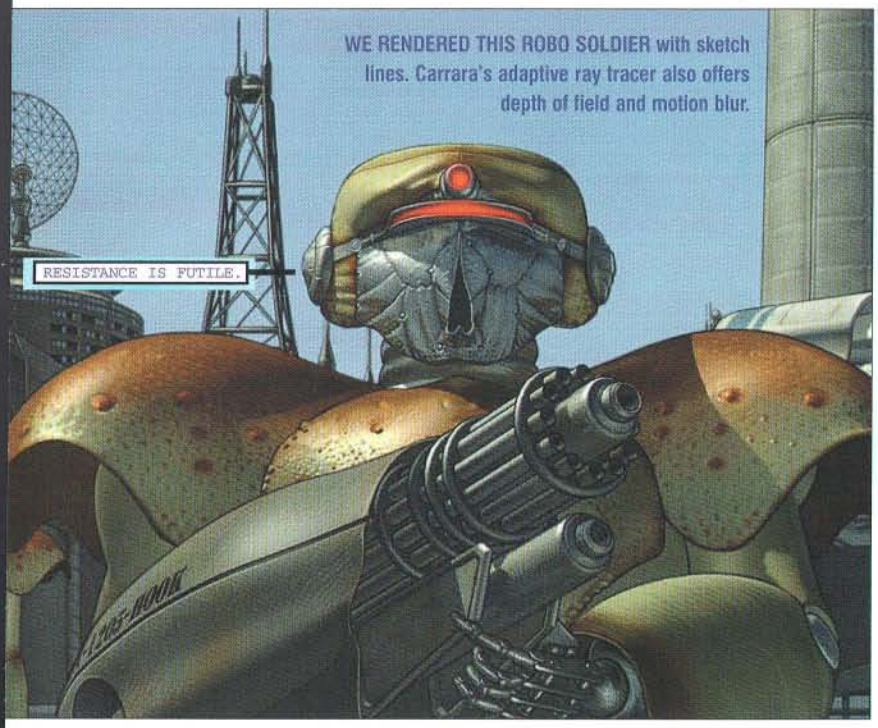
In the vertex modeler, we've created a completely irregular shape by simply lathing a wineglass, extruding some of its vertices, and using the Crease and Subdivide tools. You can make almost any shape with the excellent cutting, welding, and smoothing tools.



The metaball modeler creates smooth, organic shapes by blending a set of spherical balls. Negative metaballs take bites out of your shape. But how come this modeler has a different interface from the rest of the program?

While it lacks true function curves for complete control of tweening, Carrara has several kinds of tweeners that allow decent control of object movement between keyframes (the Spline and Velocity Graph tweeners are most useful). The sequencer is like most others and works as you'd expect.

Carrara has much of Bryce's procedural texturing power. Shading domains allow you to apply different textures to separate areas of your model. The parametric mapping geometry sticks textures on a deforming model, but applying the map in just the right place can be difficult.



WE RENDERED THIS ROBO SOLDIER with sketch lines. Carrara's adaptive ray tracer also offers depth of field and motion blur.

With such a promising feature set, why did the elves at Metacreations create a program that commandeers your whole screen—but stubbornly won't spread to a second monitor? Plus, it hides your tool palettes when you drag them over the main work area, forcing you to close your work window to find them again. And in the metaball modeler, it plays a cruel trick on unwary users—leaving the standard view-switching buttons onscreen even though switching views in this modeler requires an entirely different method.

Well, you get the idea. For a low-to-midrange general-purpose 3D app, Carrara offers a wealth of features—and frankly, there aren't many competitors in this price range. Just get ready for a few chuckles. *—Steve and Raf Anzovin*

GOOD NEWS: Strong vertex modeler. Metaballs. Integrated hard dynamics. Procedural textures. Good sequencer. Fast screen redraw.

BAD NEWS: Serious interface problems. Lacks two-monitor support. IK inadequate for complex character work.

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reviews

HP DeskJet 952C

HARDWARE

COMPANY: Hewlett-Packard
CONTACT: 800-752-0900, http://www.hp.com
PRICE: $299 (SRP)
REQUIREMENTS: Mac OS 8.1 or later, USB connection

THE HP 952C IS CROWD FRIENDLY with space-saving, front-loading in and out trays.

The new Hewlett-Packard 952C is a remarkable printer, spitting out beautiful color prints on everything from plain photocopy paper to glossy photo stock—all as good as or better than any home inkjet printer we've seen.

We were impressed with all media that emerged from the 952C. Photographs were stunning. At its High Resolution Photo quality on expensive, glossy paper, the 952C took about ten minutes to produce an 8-by-10-inch color photograph that was virtually indistinguishable from a photo lab blowup. Color printing on copier paper looked surprisingly clear and bright, with decent contrast and fairly sharp lines. Plain black text on inkjet paper was as sharp and clear as pages from our trusty 600 dpi LaserWriter, even at tiny type sizes.

The 952C isn't speedy, but it's not out of line with other inkjets. Single-spaced plain-text documents printed at the rate of three pages per minute, an 8 by 10 color page finished in about three minutes, and a 4 by 6 high-resolution photo took less than five minutes. The prints dried faster and were more smudge resistant than prints from other inkjet printers we've tried.

The 952C is also a versatile paper-handler. Its front-loading tray holds 100 pages of 8.5 by 11 paper and 20 sheets of 4 by 6 photo paper—just shove a small lever to print a snapshot-size photo. HP offers a $79 duplex attachment for hands-off, double-sided printing—but even without it, the HP printer driver will prompt you to align and load the second side of a sheet.

The HP DeskJet Utility software displays a picture roughly estimating the remaining ink. As you'd expect, the USB connection was simply plug-and-play, but HP includes no serial port for older Macs.

In short, the HP 952C can satisfy both the picky photographer and the plain-paper text jockey, at a price that won't break the piggy bank.—*Joseph O. Holmes*

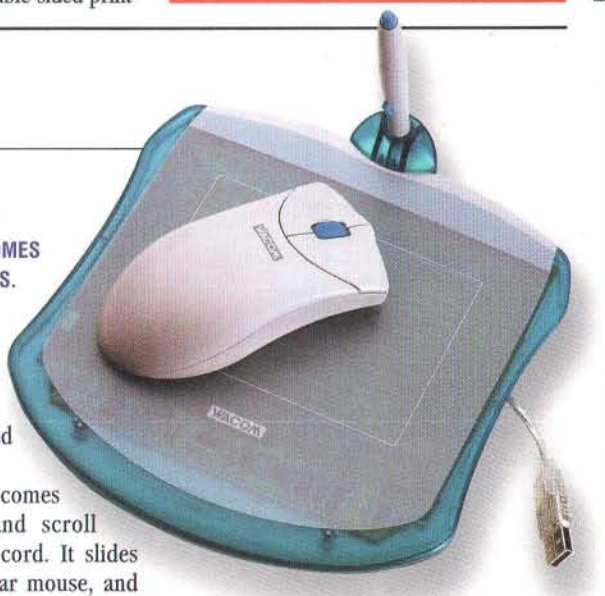
GOOD NEWS: Top-quality photo printing. Razor-sharp text output. Convenient 4 by 6 photo tray.
BAD NEWS: No serial port.

PHOTOGRAPH BY AARON LAUER

Wacom Graphire

HARDWARE

COMPANY: Wacom
CONTACT: 800-922-9348, http://www.wacom.com
PRICE: $99.95 (SRP)
REQUIREMENTS: PowerPC, Mac OS 8.5 or later, CD-ROM drive, USB port, color monitor



YUM YUM—THIS TABLET COMES WITH BLUEBERRY GOODNESS. The other iMac flavors are available as well.

The Graphire—Wacom's lower-cost tablet, pen, and mouse combo—brings drawing tablets to the masses. Wacom hits its target with the home and SOHO market, but a digital Degas will find Graphire's limited size and pressure sensitivity frustrating.

Installation was easy enough once we downloaded the latest drivers from Wacom's site. The tablet, at 4 by 5 inches, is large enough for detailed markings but not for broad strokes. The pen recognizes 512 levels of pressure sensitivity, but that's only about half as sensitive as Wacom's Intuos line, which recognizes 1,024 levels. Make a mistake? The pen has three customizable buttons, including an eraser. You can easily blend layers and control strokes in drawing applications such as the included Painter Classic.

The Graphire mouse comes complete with buttons and scroll wheel, and sans ball and cord. It slides less smoothly than a regular mouse, and there's no tactile response when you move it beyond the tablet's tracking area—this causes a moment of confusion when the cursor stops moving. Also, the scroll wheel often ignored our movements in certain applications, including Word and Excel. It doesn't support Input Sprockets, so gamers will need a different mouse.

The Graphire is a good match for home users looking for a pen and a mouse. Neither item is perfect, but the value of the Graphire makes up for the small tablet size and mouse quirks.—*Zack Stern*

GOOD NEWS: Inexpensive package. Mouse is free of ball and cord. Includes Painter Classic. USB powered. BAD NEWS: Small tablet area. Light mouse isn't sturdy. Quirky scroll wheel. Incompatible with Sprockets games.

PHOTOGRAPH BY AARON LAUER

IceView USB Hub

HARDWARE

COMPANY: XLR8
CONTACT: 800-513-9744 or 316-636-5544, http://www.xlr8.com
PRICE: $39.95 (SRP)
REQUIREMENTS: Mac with built-in USB or USB card

VIEW YOUR LOAD: The XLR8 IceView with Loadmeter offers—four USB ports, plus LED power and bandwidth indicators.

The landslide of new USB products has sent many Mac users scurrying for additional USB ports to connect their tools and toys. The XLR8 IceView (a powered four-port USB hub) goes a long way toward solving that age-old problem of limited expandability.

The IceView's biggest selling point is the USB Loadmeter, an LED display across the front of the hub that displays how much USB bandwidth you're using. Say you're printing a high-resolution color image on your inkjet printer—the spectrum of yellow, green, and red lights might hover in the yellow or the red zone. The yellow means there is still enough bandwidth to add devices like a mouse or a keyboard, while lights in the red zone indicate that additional devices will degrade the performance of everything on the USB bus.

If you plan to connect devices that lack an external power supply, you'll probably want to purchase the IceView's optional supply. Connect too many devices that derive power from the USB connection, and you're very likely to get an insufficient power error. The ability to make the IceView a self-powered hub with an additional power source is a nice upgrade option.

The Loadmeter is a good diagnostic tool, and the casing itself is well designed, but having the LED display in front means that all the USB ports are in the back of the hub. This setup is inconvenient for items you don't keep plugged in all the time. You can turn the IceView around if you want quick access to the ports, but then you can't see the Loadmeter and the computer-to-hub USB cable wraps around the unit. Still, if you're looking for a USB hub, the IceView is a good product at a good price.—*Rick Sanchez*

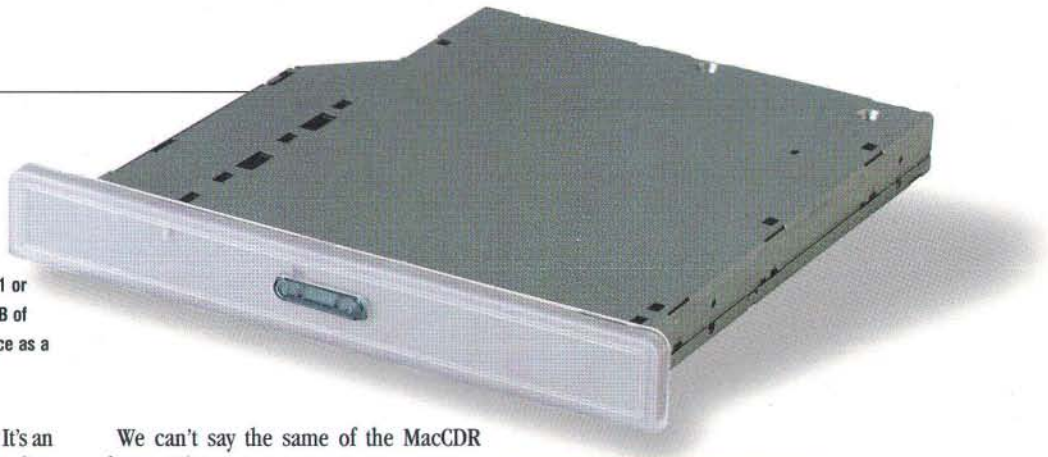
GOOD NEWS: Powered hub. Visual load metering. BAD NEWS: Uplink and expansion ports are all in back.

PHOTOGRAPH BY AARON LAUER

PowerCDR

HARDWARE

COMPANY: TechWorks
CONTACT: 800-688-7466 or 512-794-8533, http://www.techworks.com
PRICE: $299 (SRP)
REQUIREMENTS: Tray-loading iMac, Mac OS 8.1 or later, 32MB of RAM (64MB recommended), 5MB of hard disk space (up to 800MB of hard disk space as a temporary work area)



THE POWERCDR IS READY TO BURN, but a new user wouldn't know this because a dialog box mentioned in the manual never appears.

The PowerCDR's appeal is obvious: It's an internal CD-R drive for a tray-loading iMac. Once you install it, the design of PowerCDR makes it almost indistinguishable from the drive it replaces. Unfortunately, TechWorks chose Aplix's MacCDR for its software bundle. While MacCDR works, it's no Toast (http://www.adaptec.com)—and it's no piece of cake to learn.

Installing the PowerCDR is fairly straightforward, but not for the faint of heart. In a nice touch, TechWorks has provided six candy-colored eject buttons so you can match the device to your iMac case's decor.

We can't say the same of the MacCDR software. The program requires you to create a disk image out of contiguous space on the hard drive to write a Mac OS partition. On a badly fragmented disk, this can make burning a full CD-R difficult. The interface is quirky at best, and the manual, a bad translation from the original Japanese, isn't much help. Techworks says you can use Toast 4 Deluxe instead. Unfortunately, Toast failed to work properly with the drive we tested at *MacAddict*. As of press time, we hadn't found a solution to this problem.

The PowerCDR suffers from an odd software interface, imprecise manual, and a trecherous learning curve. If TechWorks fixes these problems and Toast's compatibility issues, this could become a really great drive.—*Ian Sammis*

GOOD NEWS: Well-designed internal CD-R drive. Good price. Matches iMac's design well. BAD NEWS: Bundled MacCDR software has a strange interface and a terrible manual.

PHOTOGRAPH BY AARON LAUER

Simply Postage

HARDWARE

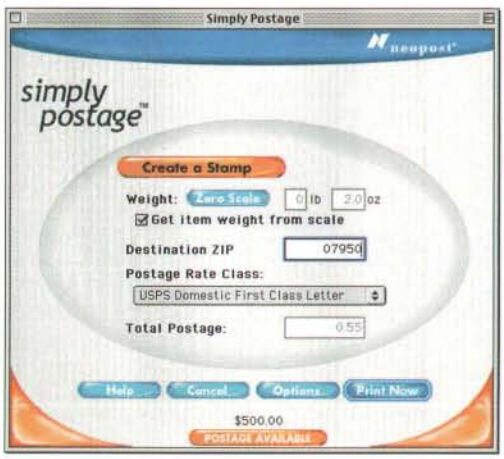
COMPANY: Neopost
CONTACT: 800-624-7892 or 510-489-6800, http://www.simplypostage.com
PRICE: $9.95 per month, plus postage at cost (initial $50 of postage comes free)
REQUIREMENTS: PowerPC, Mac OS 8 or later, 16MB of RAM, 4MB of free hard disk space, Internet access, one free USB or serial port

PHOTOGRAPH BY AARON LAUER

YOUR MAC GOES POSTAL, so you don't have to. Printer and scale pieces come in iMac colors

If you mail lots of packages and want to avoid post office lines, Neopost may have a solution for you. Simply Postage consists of a digital scale attached to a thermal label printer and software for downloading postage, determining the correct postage for your mailing pieces, and printing special "stamps" on self-adhesive labels. The package includes a free roll of 100 labels, plus $50 of postage, when you sign up.

The printer is a serial device you can use on USB-equipped Macs with the provided adapter from Entrega (949-859-8866, http://www.entrega.com). The printer and scale are both available in the full spectrum of translucent iMac colors, and both devices have small footprints. Unfortunately, the software prints postage only, so the Simply Postage printer can't take the place of a normal label printer such as the Dymo LabelWriter Turbo (*Reviews*, Dec/99, p86). Another drawback is that the scale accompanying the software doesn't even have a display, so if you want to know the weight of an item, be it a mailing piece or some other object, you have to turn on the Mac and run the Simply Postage software.



FUNKY BUT FUNCTIONAL: Creating stamps like the one below is easy, but the software needs improvement.

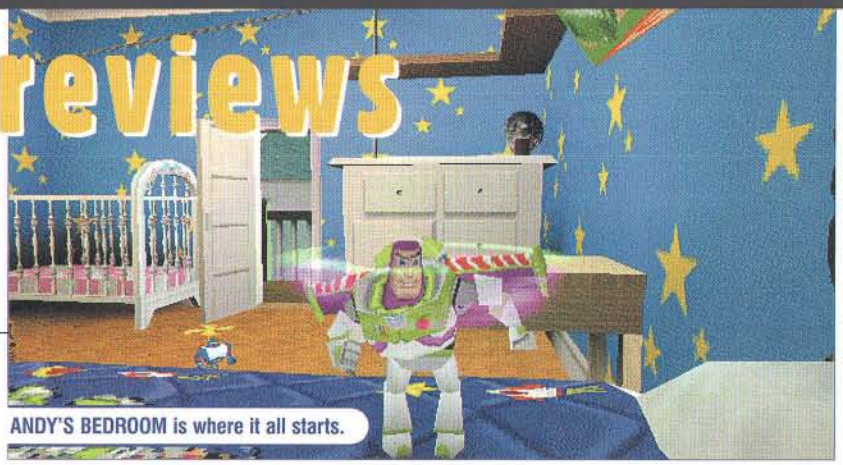
For the most part, using Simply Postage is easy. The Insta-Stamp feature lets you set a default postage amount you can print by pressing the right-hand button on the printer, even if your Mac's turned off. You can also plop a parcel (weighing up to four pounds) on the scale or enter its weight manually, type the destination zip code, and select the class of service—the program will determine the correct postage. Then, just click Print Now to create a funny-looking, bar-coded stamp, which subtracts the amount from the available postage. You can refill the printer's postage online at any time with a minimum purchase of at least $25, though you can never store more than $500 in your printer. Fortunately, the printer maintains the postage even when you turn its power off or unplug the unit.

U.S. postal regulations require you to deposit mail bearing a Simply Postage stamp on the same date that appears on the stamp. (You can print up to seven days in advance, but you can't turn back the date, so don't even think about sneaking your tax return in late.) The bar-coded stamps allow you to drop your mail in any mailbox in your local zip code or at your post office counter. If you dread waiting in line, this feature alone might outweigh any of Simply Postage's shortcomings. Time is money, after all.

Since labels cost roughly 6 cents each even when purchased in large quantities, Simply Postage isn't economical for everyday letters. However, the convenience outweighs the cost if you send a lot of expensive international, Priority Mail, or Express Mail packages. The only problem is that it prices Priority Mail packages weighing more than five pounds according to zone (distance), and though you can determine the correct zone with a simple database lookup, the software offers no help in this area. Likewise, Simply Postage has no provisions for adding special services such as insurance, delivery notification, or registered mail.

We would find it easier to recommend Simply Postage if it had smarter software and if the printer could also create address labels. To its credit, at least Neopost offers a postal solution for the Mac, unlike its competitors—E-Stamp, Pitney-Bowes, and Stamps.com.—*Owen W. Linzmayer*

GOOD NEWS: Inexpensive monthly charge. $50 free postage. USB adapter included. Full spectrum of iMac colors. Easy-to-use software.
BAD NEWS: Scale lacks display. Prints postage only. Labels aren't cheap. Software could be smarter.



ANDY'S BEDROOM is where it all starts.

Toy Story 2

FUN & GAMES

COMPANY: Disney Interactive
CONTACT: 800-900-9234, http://www.disneyinteractive.com
PRICE: $29.99 (SRP)
REQUIREMENTS: G3 processor (266MHz or faster), Mac OS 8.6 or later, 64MB of RAM, 180MB of free hard disk space, 16X CD-ROM, 3D video card with 6MB video RAM or greater, thousand-color display

Sure, Toy Story 2 is technically a game for kids. Technically, so is Mario. But people of all ages can enjoy the latest action game from Disney and Activision. Based on the movie of the same name, Toy Story 2 is a 15-level, 3D-platform game in which you play Buzz Lightyear on a mission to rescue the kidnapped Woody from an insidious toy collector. And believe it or not, it's quite addictive.

Toy Story 2 is typical platform fare where Buzz advances through different levels, collecting coins and tokens, figuring out puzzles, racing other objects, and battling evil bosses. In the first level, Buzz must explore and conquer five different rooms in Andy's house—he battles a robot in the attic, races a car in the garage, and collects coins and finds Little Bo Peep's missing sheep throughout. To do all this, he runs, jumps, climbs, and shoots lasers, in addition to other actions.

Graphically, the game is appealing. It's no Quake III Arena, but it's bright and colorful, with the kind of visual appeal that holds your attention for hours on end. The game can get fairly complex—puzzles can take seconds or hours to solve. Targeting kids eight and up, this game may occasionally be too difficult for the younger end of the spectrum.

The game is slightly buggy—clipping problems sometimes plague the graphics, and the camera can be jerky, causing vertigo-induced migraines after hours of play. If you don't have a G3/266, you're flat out of luck—it's back to Tetris for you. However, if you are blessed with a powerful system and have a particular affinity for *Toy Story* and for platform games, this is a worthwhile purchase—you'll find yourself whiling away hours and hours and days and days.—*Cathy Lu*

GOOD NEWS: Looks good. Fun.
BAD NEWS: Some graphical and technical glitches. Intense system requirements. Too difficult for some tykes.

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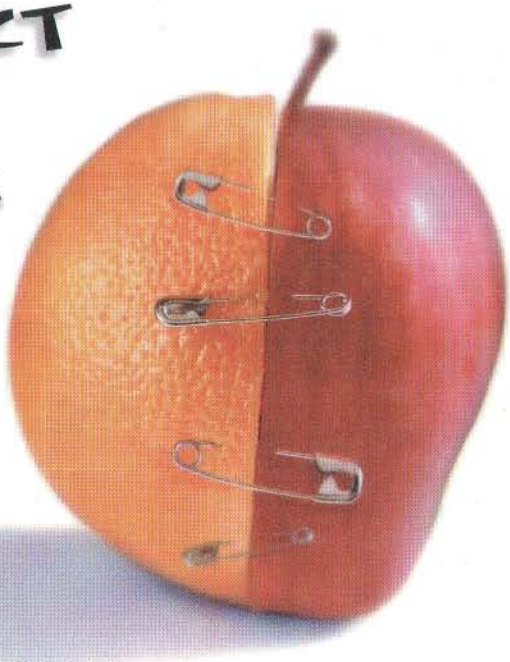

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Macworld 4½

winner macworld eddys 1999

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power play

PSSST—meet us on a CTF-November map for some real fun.

Extending Unreal

Mods make killer games even more...uh...killer

FIND GAME DOCTOR 1.2 on The Disc.

WHAT'S BETTER—Unreal Tournament or Quake? Duke it out at http://www.macaddict.com/debate

We've been playing Unreal Tournament pretty much nonstop since the first-person shooter came into our offices in early January. But even a game such as Unreal Tournament can get a little stale after a few hundred hours of continuous play—sure, we're talking serious gaming here, but it'll hit you, too, if you play long enough. But there *is* hope, fellow fraggers, for pulling new excitement out of Unreal Tournament. It's in the form of several third-party modifications (or mods)—new skins, models, sounds, and maps. A lot of talented folks out there are making new mods—unfortunately, the *really* cool creation tools are PC-only, and it's not likely they'll be coming to the Mac soon.

HAVE A HANKERIN' to play your favorite comic character, such as Iron Man? Satisfy it with mods.

Still, though, you *can* hold your nose and use the maps and skins created by others. First you'll need to download the latest Unreal Tournament updater from Westlake Interactive (http://www.westlakeinteractive.com)—as of writing this, the current version is 405b. This patch allows mods (such as new maps and skins) to work properly, plus it fixes a few bugs and improves the user interface a bit. Even if you don't plan on using mods, you should download and apply this patch.

There are two methods for installing mods once you've found and downloaded them. The first is to drag the mod onto the UMOD Installer (an application that comes with Unreal Tournament), or drop the proper files in the proper directories inside the Unreal Tournament folder (most of these belong in Unreal's System folder). The first method only works with Umod files, which have a .umod file extension. Just drag these files onto the Umod Installer icon, and it takes care of the rest.

The second method is trickier—you'll have to take a careful look at the Read Me file that accompanies the mod and follow its instructions closely. This usually involves dropping the mod files in appropriate folders, then modifying theUnrealTournament.ini text file (located in the System folder in the Unreal Tournament folder) to tell Unreal Tournament about the mods you've just added. In either case, you should obtain the Unreal Mac Autotyper. This utility makes sure all of your downloaded goodies have the proper file types and icons—not essential, but nice. You can find the utility at http://www.unrealintosh.com/utosh/files/UnrealMacFileTyper1.2.sit. —*DR*

UNREAL LINKS

UNREALINTOSH
(http://www.unrealintosh.com)—Of course, we *had* to include this Mac-focused Unreal site. It's a little sparse right now, but look for improvements.

PLANET UNREAL
(http://www.planetunreal.com)—One of a number of sites that sports Unreal-related news, tips, and links, Planet Unreal also hosts a wad of Unreal-related sites (these aren't links; rather, Planet Unreal hosts entire sites on its servers).

UNREALITY
(http://www.unreality.org)—A mix of news, tips, and hosted Unreal-related sites, Unreality also features Painful Detail with its great skin collection.

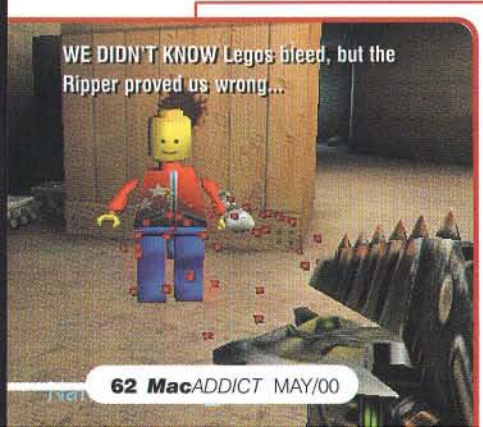
UNREAL UNIVERSE
(http://www.unrealuniverse.com)—Aside from providing the usual (and thorough) mix of news and tips, Unreal Universe also hosts lots of Unreal-related sites.

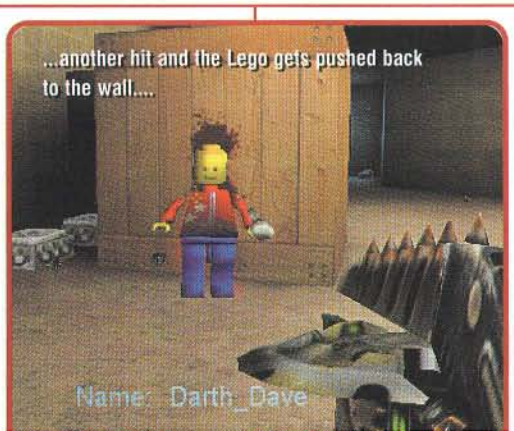
UNREALIZED.COM
(http://www.unrealized.com)—Here's another site with tips, news, and tutorials; it also includes some info on level design. Unrealized definitely targets the Unreal developer.

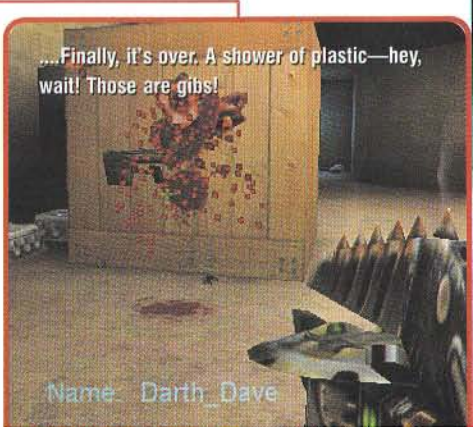
WOLF'S UNREAL
(http://unreal.gamede-sign.net)—Another general-interest site with news, tips, tutorials, and other salient Unreal data.

UNREALNATION
(http://www.unrealnation.com)—A repository for news, how-tos, and tons of Unreal-related downloads.

UNREALISM
(http://www.unrealism.com)—This general-interest Unreal site weighs heavily on the news and tips side.

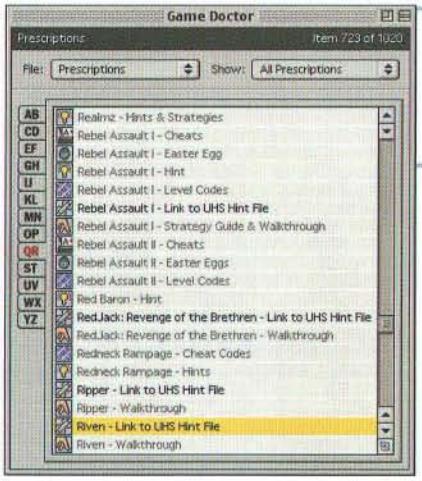






THE DOCTOR IS IN

Game Doctor helps you cheat... uh, win. Yeah. Win. Feeling stuck in Tomb Raider III? Want to get a nuke for your aircraft in F/A-18 Hornet? Game Doctor ($10 shareware, Illume Software, http://members.aol.com/illumesoft/illume.html) may have a solution with its cheats, tips, Easter eggs, and other bits of useful knowledge. With over 1,000 entries at your fingertips, you should find the help you need—unless the game you're playing is brand new, that is. Game Doctor covers games through Tomb Raider III and Descent III, but is missing some newer games such as Unreal Tournament. Still, if you play a lot of games, you owe it to yourself to check out this nifty app.—*DR*



THE GAME DOCTOR will help you beef up your puny gaming skills.

Screen Shot of the Month

Once again, an intrepid reader came through with some gorgeous screen shots powered by Voodoo graphics. If you think you can do better, send your best shots to letters@macaddict.com.

Artist's Statement

I took these on a G3-upgraded PCC PowerCenter 150 with a Voodoo1 card. I could get better shots than these, but my hands are full just trying not to get shot down.—*AV3*

Get at Durandal's Guts

MARATHON 2 SOURCE CODE RELEASED

Marathon fans with programming experience and *way* too much time on their hands will be overjoyed to know that Bungie has released the source code for Marathon 2 under the Gnu Public License. You can download the source code, do some tweaking, and build your own game based on the Marathon 2 source—after some serious work, of course. You'll find the source code on Bungie's FTP site, ftp://ftp.bungie.com/pub/mac/misc.

Inexperienced programmers can go on with business as usual—there's nothing for them to see here. If you do manage to make some use of the source code, send us your game!—*DR*

IS THAT YOUR SKULL, or are you just happy to see me?

What the Staff Is Playing...

HOW WE'RE SPENDING OUR WORK HOURS

> Rob

Unreal Tournament—I can quit anytime I want...but nobody likes a quitter, so I keep playing.

>Ian

Civilization: Call to Power—It's sort of sad that they put this much work into writing something that's much less fun than the original.

Myth II—I'm trying to beat it at the Legendary skill level.

>Cathy

Toy Story 2—It's pretty fun, but personally I think this game is a little hard for kids. At least, that's what I keep telling myself.

>Dave

Sid Meier's Alpha Centauri—It's a good thing I'm not in charge of an interstellar colony ship. I'd just tell everyone to build ice cream parlors and 7-Elevens.

how to

We found out how to build a perfect how-to section in just 24 hours!

Batch Your Graphics with GraphicConverter 3.8

by Ian Sammis

EASY

It's no accident that Apple's marketing folks hardly let a week slip by without uttering the term "creative professionals." Artists, musicians, and other creative people dominate the Mac market, using their machines to produce works of vision and beauty. There's almost nothing as wonderful as watching a work of art take shape in Photoshop, Freehand, or one of the other wonderful graphics applications that are the staple of the Macintosh community.

And yet, although these programs are usually a great deal of fun, they have a dark side. At times it feels as though we're living in a dark vision from the 1930s—performing dull, repetitive tasks for our evil electronic overlords. Facing a list of 50 images, you know that before you can do anything even remotely entertaining, you'll have to open them, shrink them to a fixed size, and save each and every image as a compressed JPEG file.

Fortunately, there's a stalwart shareware program that can lift us all out of drudgery into a utopian world where we can focus on the parts of our jobs we love. GraphicConverter, by Lemke Software (http://www.lemkesoft.com), has a powerful batch feature that can automate the vast majority of the dull tasks eating into time we could otherwise spend checking email, playing Unreal Tournament, or—best of all—using graphics applications for their intended purpose: creating art.

A word of warning before you start: You cannot use GraphicConverter's powerful batch features without registering the program. If you're the sort of person who believes paying for software is a mortal sin, you're out of luck. Pay the fee—if there was *ever* a shareware program worth the money, it's GraphicConverter.

Once you've sojourned to Lemke's Web site and paid the $35 ($30 if you register online), you can start tapping into GraphicConverter's true power. We'll walk you through the bane of many a Web site creator's existence: creating a series of thumbnail images. Here's how to make a lineup of different-size images fit in a 150-pixel-square box, then save them as compressed JPEG images.

ILLUSTRATION BY HUGH D'ANDRADE

TOUGH
This stuff's for the pros.

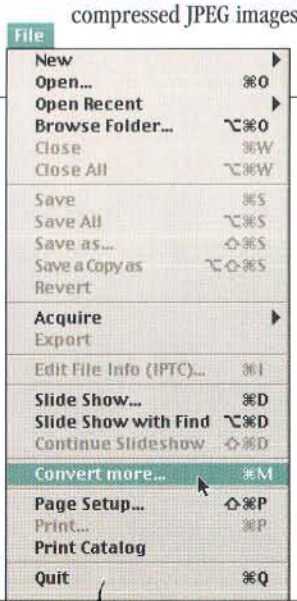
TRICKY
It'll take some effort, but you can do it.

EASY
The fundamentals, if you will.

THINK WE'RE JUST MAKING THIS UP? Can't make it work? Rant and rave at http://www.macaddict.com/debate.

1 Convert More

GraphicConverter's powerful batch features are not immediately obvious. To the casual observer, GraphicConverter looks like just a better-than-average shareware paint program with a file format fixation. Cast all such thoughts from your mind. The Convert More command in the Format menu is unbelievably powerful—it would make a great shareware program by itself. To get started, choose Convert More from the File menu.



THERE'S A LOT OF POWER hidden behind this unassuming little menu option.

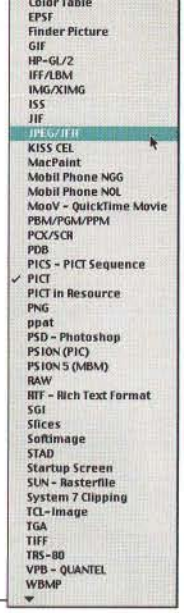
2 Echoes of an Older Interface

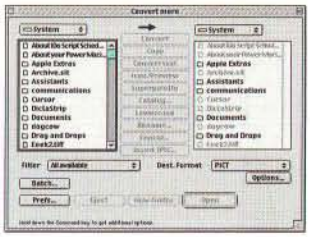
The Convert More window that appears is oddly reminiscent of the ancient Font/DA Mover that was a staple of the Mac world before Apple released System 7 in 1991. This feature would be useful even without the Batch tools—if all you need to do is convert file types, just select the files to convert in the panel on the left, pick a format option from the Dest Format pop-up menu, and click Convert.

You'll need to do quite a bit more work, however. To process the images before you convert them, click the Batch button.

The Batch window that appears next is nearly as powerful as the rest of GraphicConverter's features combined. This window lets you create scripts to apply simple transformations (scaling, gamma corrections, simple filters, and the like) to each image you select in the Convert More window before the program actually converts it to the destination format. The scripts can even make simple decisions based on the properties of the image.

THE DEST. FORMAT MENU REVEALS GRAPHICCONVERTER'S original purpose—it contains a vast, bewildering array of file types. Need that picture in TRS-80 image format? No problem!





THIS WINDOW IS PRETTY POWERFUL by itself, but it's the Batch button in the lower left that reveals GraphicConverter's true strength.

3 What If? But Then, What If?

Making thumbnails is the sort of task that sounds absolutely trivial until you try to make it happen automatically. The problem is that some images need their height changed to 150, others need their width changed, and still others that are already smaller than 150 by 150 should stay the same. This means you can't simply use the same commands on each image—you need to make some decisions as you go along.

Fortunately, GraphicConverter allows you to perform tests on an image you've imported. It contains a limited version of the usual IF-THEN-ELSE structure that, while not nearly as powerful as in most full-featured programming languages, is sufficient for your purposes. To get started, scroll the box at the top left until you see the If command in the batch window. Select it, then click Add to display a series of options.

First of all, you don't want to perform any processing on images that already fit into your 150-by-150-pixel box. Click the check boxes next to Process Picture Only If Width and Process Picture Only If Height. In the text fields next to these items, type `1` to `150`. This statement tells GraphicConverter to apply the next series of commands only to those images that already fit in a thumbnail format.

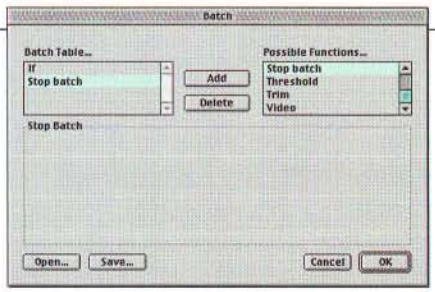
MAKING PICTURES FIT into a 150-pixel box is tricky! The Apple Studio Display image is very tall and thin, so you should set the image height to 150 while constraining proportions.

THIS MAP IS WIDER than it is tall, so in this case you need to shrink its width to 150.

PHOTOGRAPH COURTESY OF APPLE, INC.

4 Stop It!

If an image is already small enough to fit in a thumbnail, you just want to make it a JPEG, then stop. To halt the batch processing script, scroll to the Stop Batch function and click Add. That's it! GraphicConverter stops the batch program and simply converts the smaller images without processing them further.



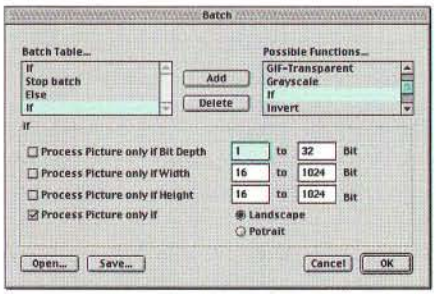
IF THE IMAGE ALREADY FITS INTO YOUR BOX, there's no need to adjust its size.

5 Tall or Wide, Sir?

Your batch script isn't terribly impressive just now: It examines an image to see what size it is, then does nothing. You need to insert the commands that will actually perform image scaling.

For starters, the script must stop considering those images that already fit in a thumbnail format. To make this happen, add an Else command to the script. Else tells the script to start considering the *opposite* case from the last If statement. Statements that come after this Else command apply only to images for which at least one dimension exceeds 150 pixels.

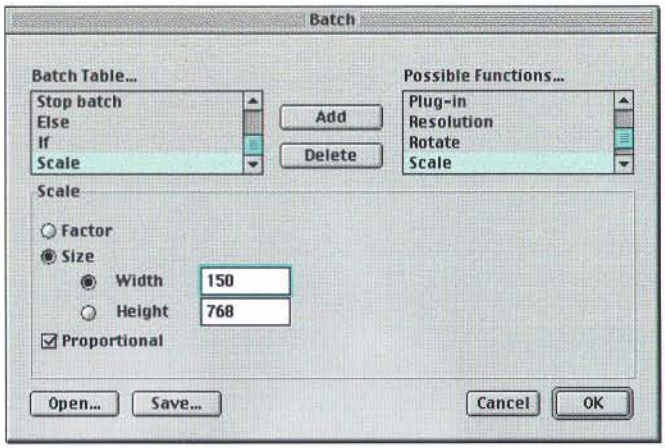
You still have two cases to dispose of: images wider than they are tall, and images taller than they are wide. To distinguish these, add another If command to the script and click the last check box. Click the Landscape button so the If statement selects images in the Landscape (width exceeds height) configuration.



FOR THE PURPOSES of this control, Landscape pictures are wider than they are tall, while Portrait pictures are taller than they are wide. (Art students and humorists should keep their comments to themselves.)

6 Scale It Back

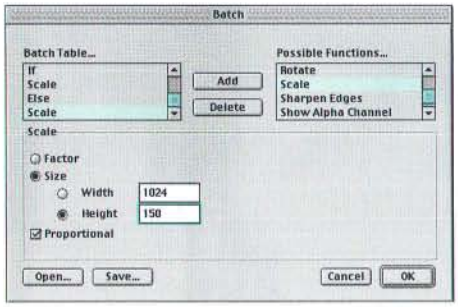
Now that you know exactly what sort of image you're dealing with (in this case, a landscape image), you can tell the script to take appropriate action. Add the Scale function to the script (select it and click the Add button). To scale the image to a fixed size, click the Size button. Click the Proportional button to avoid distorting the image. Since it's the width you need to fit, click the Width radio button and type 150 into the text field. You're scaling the image proportionally, so you can ignore the text field next to Height.



IN THIS CASE, you're dealing with a landscape image and need to scale down its width.

7 The Final Act

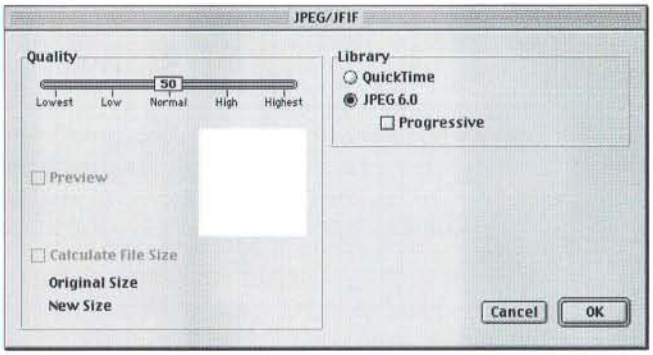
To deal with the final case, add another Else statement to the script. The script is now dealing with the final case: images taller than they are wide. Add a Scale command to handle this case. Set it up just like the one in the previous step, but click Height instead of Width and set the Height text field to 150. You're now done with the script; it'll handle all the resizing. Click OK to dismiss it.



THIS ONE IS A PORTRAIT, so you need to scale down its height.

8 Do the JPEG

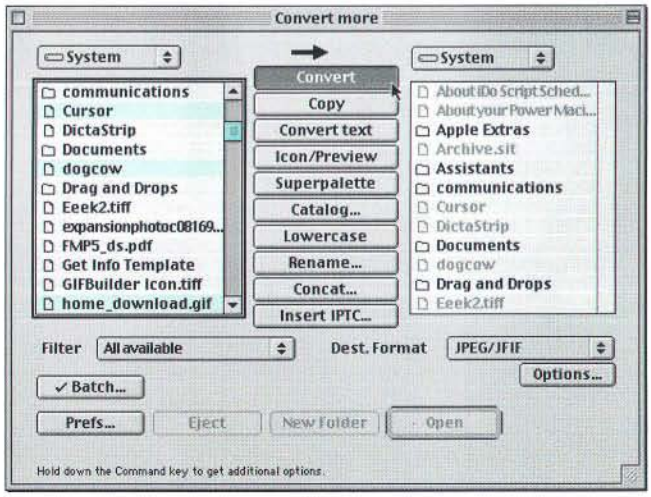
Select JPEG from the Dest Format pop-up menu, and click the Options button just below it. In the dialog box, set the quality level for the JPEGs you're creating. For complex images, 75 is a good minimum, although for very simple images you could probably go as low as 30 without too much harm. Click OK.



FROM THIS PANEL, set the quality level for the JPEG images you're saving.

9 Start the Conversion Process

You're now just about done. Select the images you want to convert in the left-hand side of the window. To select more than one, Shift-click rows of sequential files, or Command-click the rows to form a discontiguous selection. Click the Convert button to start processing the files. If GraphicConverter needs any more information, it'll ask you at this time. Then just sit back and munch some snacks while your computer toils away. Turnabout's fair play, after all. To save your script, click the Batch button, then click Save. That way, after you've written the script once, the computer will do *all* the work.



ONCE YOU'VE SELECTED THE FILES TO CONVERT, click Convert, sit back, and start munching the popcorn.

Ian Sammis converted his desk into a trash heap and now can't find the undo command.

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how to

Build an MP3 Player in REALbasic

by Ian Sammis

TOUGH

There was a time when anyone with a computer learned the BASIC (Beginner's All-purpose Symbolic Instruction Code) programming language as a matter of course. Back in the days when 64K was an unimaginably vast amount of RAM and the most common storage device was a tape recorder, you needed a working knowledge of BASIC to do anything useful with a computer.

Fortunately, we've come a long way since then. Still, there was something to be said for the dark days of the early eighties when people hand-rolled programs. In those days, if a program didn't quite meet your needs, you could just rewrite it until it did what you wanted.

REAL Software (http://www.realsoftware.com) has spent the last three years trying to revive the nearly moribund (on the Mac, anyway) BASIC language. In REALbasic ($149.95 or $349.95 for a professional edition with database and cross-platform features), the company has created a package that bears roughly the same evolutionary relationship to the Apple II's AppleSoft Basic that humans have to mole rats. REALbasic is an elegant, powerful tool that can build programs to meet specific needs you might otherwise have trouble fulfilling. To get you acquainted with this souped-up version of BASIC, we'll show you how to build a simple MP3 player. The program you build won't be SoundJam (http://www.soundjam.com) by any means, but it'll allow you to create a simple playlist and listen to your songs.

ILLUSTRATION BY NATHAN JUREVICIUS

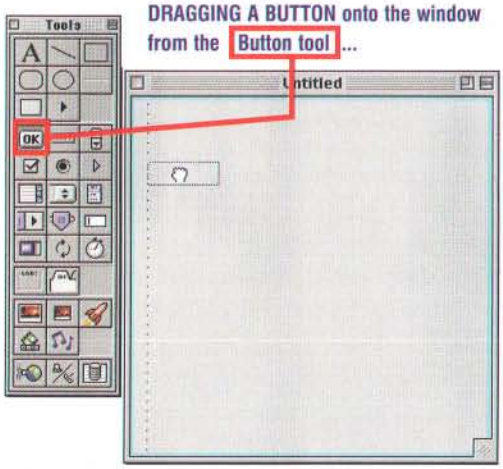
FIND A DEMO of REALbasic 2.0.2 on The Disc.

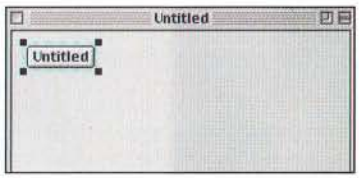
GOT A GROOVIER REALBASIC MP3 PLAYER? Put your gripes, comments, and ideas on http://www.macaddict.com/debate

Create the User Interface

1 Your First Button

Before writing code, you need to create all the controls, list boxes, and QuickTime movies that will form the player. To start, launch REALbasic and drag a button from the panel at the left onto the window. You'll use this as your Play button.

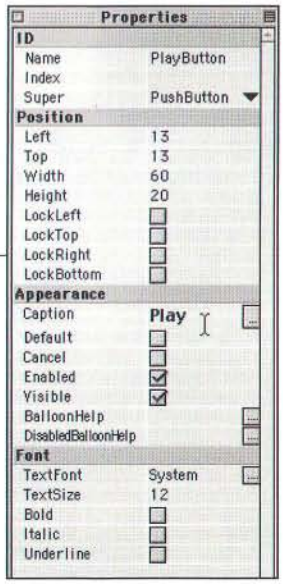




...creates a new, untitled button.

2 Name It Play

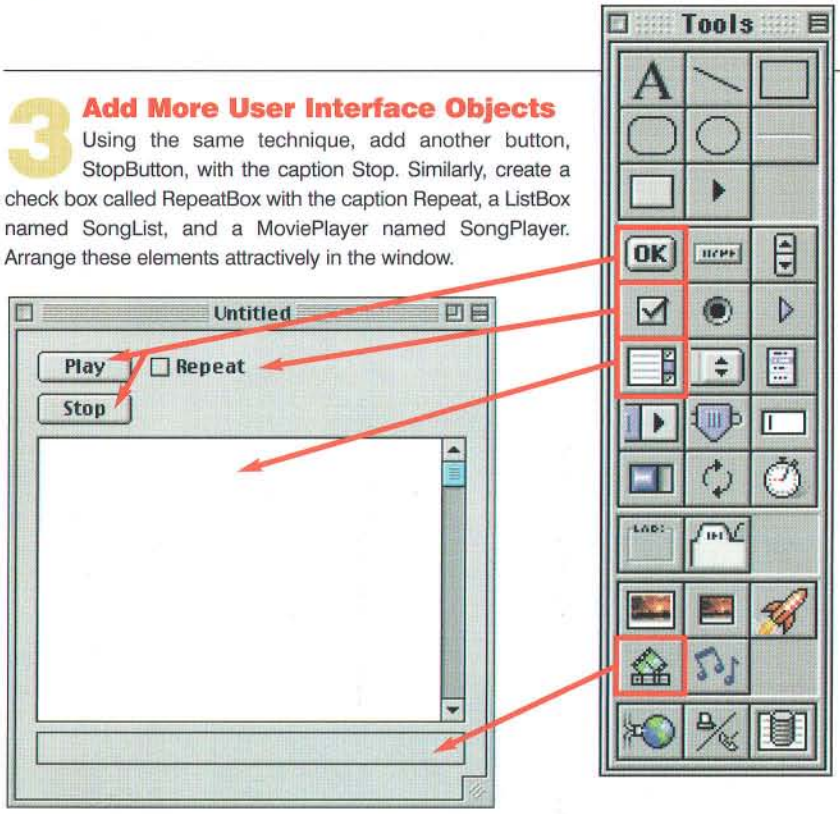
If it isn't already selected, click the button you just created. You should see a window on the right side of the screen entitled Properties (if it isn't there, you can display it by choosing Show Properties from the Window menu). The Properties window lets you change some of the more obvious properties of the currently selected element. Change the button's name to PlayButton and the button's caption (the text displayed on the button) to Play.



THE PROPERTIES WINDOW lets you set the name, position, and other basic properties of the currently selected item.

3 Add More User Interface Objects

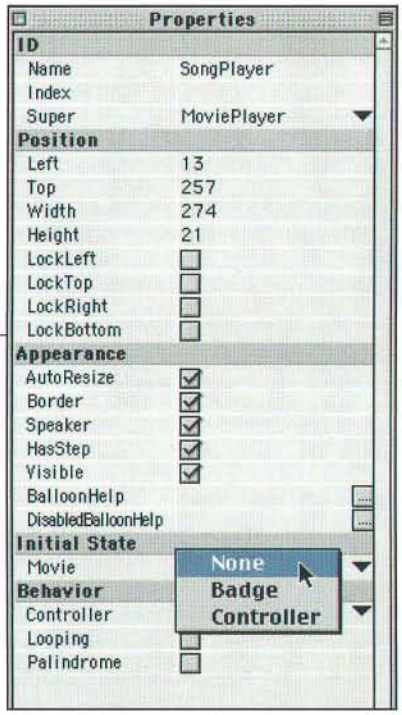
Using the same technique, add another button, StopButton, with the caption Stop. Similarly, create a check box called RepeatBox with the caption Repeat, a ListBox named SongList, and a MoviePlayer named SongPlayer. Arrange these elements attractively in the window.



CREATE THE REST of the user interface by dragging controls onto the window from the tool palette.

4 Hide the MoviePlayer Controls

The SongPlayer (the QuickTime movie player control you created in the last step) is the heart of your program. Thanks to QuickTime 4, you can use this simple QuickTime player to play MP3 songs. Your Play and Stop buttons will control the SongPlayer. Unfortunately, the scripts you write will get confused if you let the user fiddle with the usual QuickTime controls. You could get around this problem with some clever coding, but there's a simpler way: Click the QuickTime player, then set its Controller behavior to None in the Properties window.



TURN OFF THE QUICKTIME Player controller—it'll just confuse things.

5 Open the Menus Window

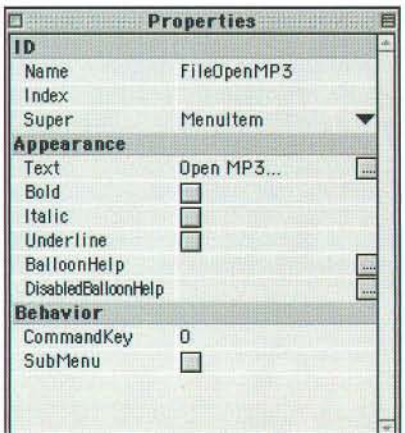
Next, you need to create a menu option that lets users read in the tunes that will play. Bring the project window to the front by choosing Project from the Window menu. Double-click the Menu icon to open the project's Menus window. Once it's open, click the File menu, then the blank space below Quit.

CREATE A NEW MENU ITEM for opening MP3 files.

6 Create the Open Item

You're now ready to create the Open MP3 menu item. In the properties window, set text to "Open MP3..." and CommandKey to O. The ellipsis indicates that selecting the item summons a dialog box (in this case, the Open box). Drag the new item above the Quit item in the File menu to put it where the Open item traditionally appears.

If you click the new item again, you'll see the name "FileOpenMP3..." Remove the ellipsis, as you'll find its presence awkward when you need to write code relating to his menu item.



DELETE THE ELLIPSIS from the menu name; it gets in the way when you refer to the menu from the program.

Managing the Playlist

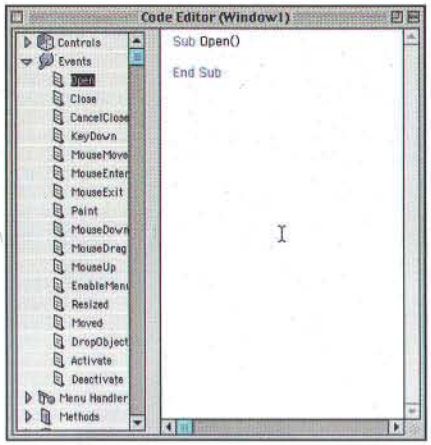
1 Add Properties

Now that you've laid out the user interface, it's time to add the code to turn these controls into an MP3 player. Before you start, you must add some properties to your program.

The central feature of your player is the large ListBox in the center of the window, which will list the songs you've loaded in. However, you also need to store the songs themselves so you can actually play them. REALbasic can add additional properties to the window for storing such items.

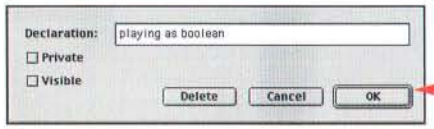
To create window properties, double-click the Untitled window (the one with the buttons and list box) somewhere outside its controls. The Properties window and toolbar disappear, and a new window, the Code Editor, appears. In the Code Editor, you add the BASIC instructions that tell the program how to respond to a user clicking buttons, list boxes, and so on. To add a new property, choose New Property from the Edit Menu. In the window that appears, type "songs (100) as movie." When you click OK, you'll see a new item at the bottom of the Code Editor's left panel: the SongList property. (You may have to click the reveal triangle next to Properties to see it.) Using the same method, create a property called "playing as boolean."

What do these somewhat cryptic statements mean? The first—"songs (100) as movie"—tells REALbasic that your song list should contain a list of movies numbered from 0 to 100. You'll store the movies on this list as you read them in. The second—"playing as boolean"—indicates the Playing property stores either true or false; you'll use that parameter to find out if the player is working.



DOUBLE-CLICKING THE WINDOW or one of the user interface items brings up the Code Editor, which lets you write the code to drive the program.

THIS TELLS REALBASIC to set aside space for 101 QuickTime movies, from 0 to 100.



THE PLAYING PROPERTY will make it easy to see whether the program is currently playing.

SELECTING NEW PROPERTY lets you create new places to store important information.

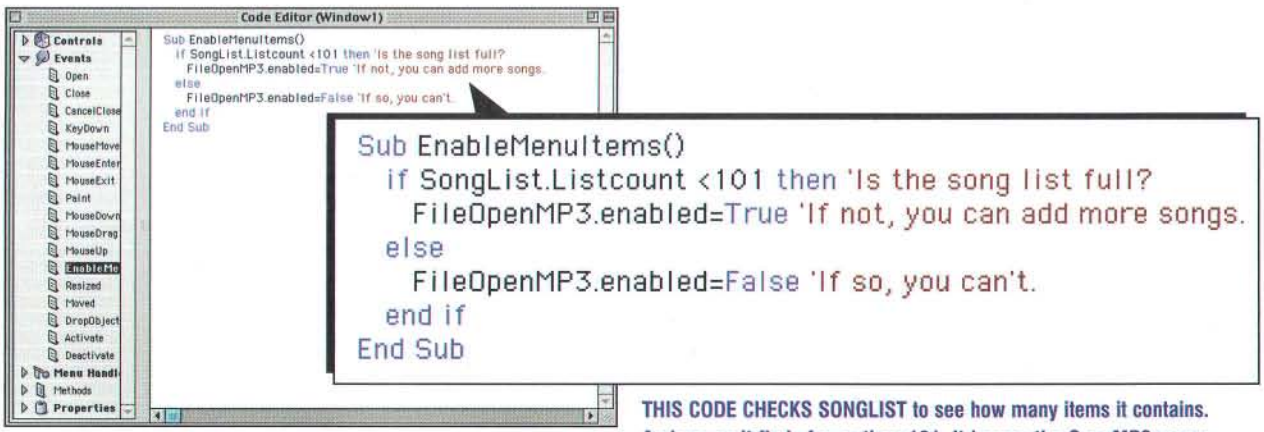
2 Enable the Menu Item

Just for fun, run the program to see your progress. Select Run from the Debug menu. The program looks great, but none of the buttons, check boxes, or menu items (other than Quit) actually work. It's time to add the code that turns your program into a functional MP3 player.

Before quitting the program, note that the Open MP3 menu item is grayed out. By default, REALbasic disables any menu items you create until you explicitly tell it otherwise. You should reenable this item, because until you've completely filled up your list of songs (up to 101), you want to retain the ability to add them.

To implement this, double-click the player window to bring the Code Editor to the front. In the panel at the left side of the window, you should see the word Events with a blue finger icon next to it. Click the Finder-like triangle in the left margin to see what events you can write code for. One should be EnableMenuItems. Click EnableMenuItems to edit its code, and enter the code shown here.

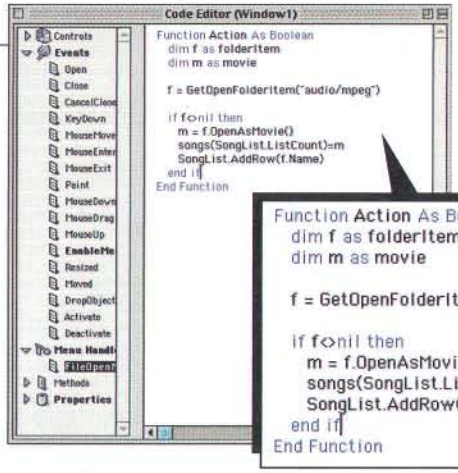
In some of the lines, you'll see a single quote followed by plain English. The single quote tells REALbasic to ignore whatever lies beyond it, so you can add comments to the program. While this may not seem necessary, comments are quite useful if you ever plan to share your code or start using it again yourself after a long hiatus. You don't actually have to type the comments when you're entering code—they're there to help you and other users understand what's going on.



THIS CODE CHECKS SONGLIST to see how many items it contains. As long as it finds fewer than 101, it leaves the OpenMP3 menu item enabled.

3 Open an MP3 and Add It to the List

Now that you've made the menu item selectable, let's add the code for opening a window. First make sure the Code Editor window appears at the front, then select New Menu Handler from the Edit Menu. In the dialog box, select the item you want to script. Pick FileOpenMP3, and click OK. A new Action function presents itself—this will run whenever the user selects the menu item. Enter the code shown here.

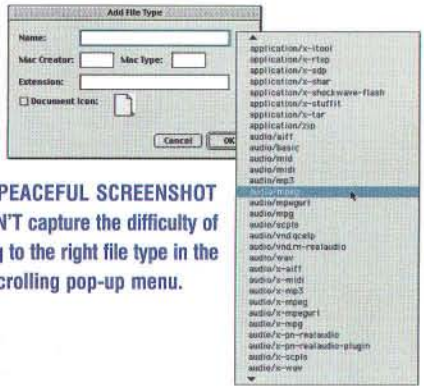


THIS PROGRAM LETS THE USER open an MP3 file and add it to the music list.

```
Function Action As Boolean
  dim f as folderItem
  dim m as movie

  f = GetOpenFolderItem("audio/mpeg")

  if f<>nil then
    m = f.OpenAsMovie()
    songs(SongList.ListCount)=m
    SongList.AddRow(f.Name)
  end if
End Function
```

4 Tell the Program What an MP3 Is

At this point, the program won't actually let you open anything—the problem is that you haven't told it yet what an audio (MPEG) file is. Select File Types from the Edit menu. A dialog box shows you what file types the program currently understands. Text won't do an MP3 player much good, so click the Add button. Click the pair of arrows to the right of the Name field and select the Audio/mpeg option from the menu. Warning—this menu is very long and slippery, and managing to select Audio/mpeg is a feat worthy of a Jedi Master. Once you've done so, congratulate yourself on your superior mousing skills and click OK. Set Mac Creator and Mac Type to "????" and click OK twice.

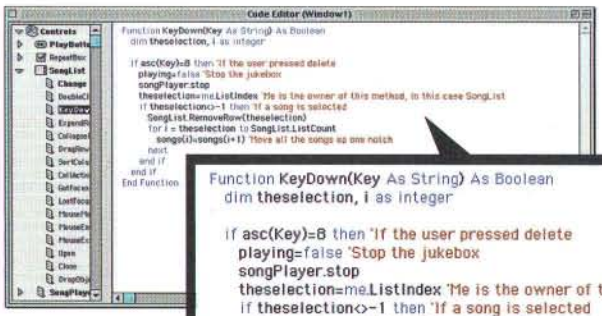


THIS PEACEFUL SCREENSHOT DOESN'T capture the difficulty of getting to the right file type in the fast-scrolling pop-up menu.

5 Deleting MP3s

Adding songs to the playlist is all well and good, but what if you make a mistake or get sick of a particular song? Your player won't really be complete until you can *remove* songs as well.

Let's say you want to let users delete songs by selecting them, then pressing the Delete key. To do this, add a KeyDown handler to SongList so it knows what to do if the user presses Delete. Double-click SongList (the list box in the interface window) to bring up the code editor. Click the word KeyDown in the panel on the left side of the window, then type the following code.



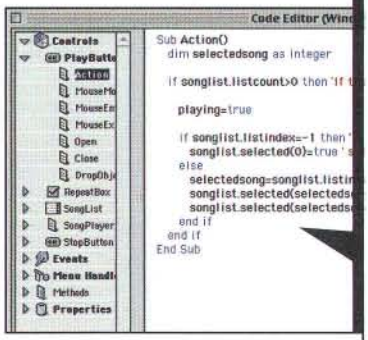
WHEN THE USER TYPES THE DELETE KEY, REALbasic sends a special character (number 8) to the KeyDown method.

```
Function KeyDown(Key As String) As Boolean
  dim theselection, i as integer

  if asc(Key)=8 then 'If the user pressed delete
    playing=false 'Stop the jukebox
    songPlayer.stop
    theselection=me.ListIndex 'Me is the owner of this method, in this case SongList
    if theselection<>-1 then 'If a song is selected
      SongList.RemoveRow(theselection)
      for i = theselection to SongList.ListCount
        songs(i)=songs(i+1) 'Move all the songs up one notch
      next
    end if
  end if
End Function
```

Playing and Stopping

1 The Play Button

You're now finally in a position to make a song play. You'll do this in three steps. First, tell the Playing button to set Playing to true and reselect the currently selected song (or the first song, if you don't have anything else selected). To do so, double-click the Play button, then type the following script. The last two commands deselct the current song, then reselect it, making the song play—as you'll see in the next step.

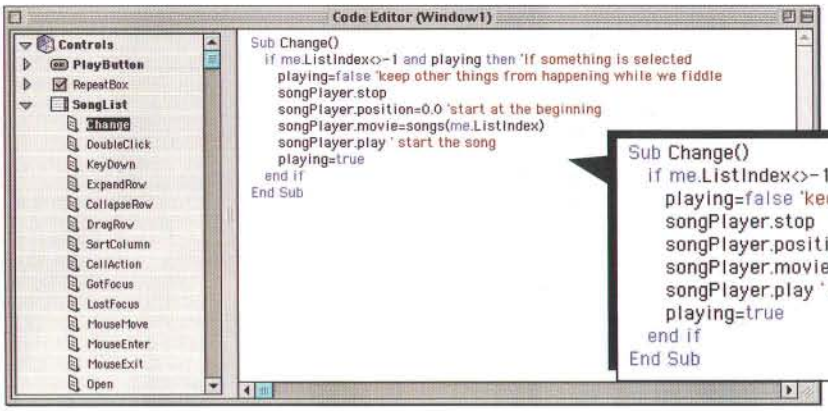



```
Sub Action()
  dim selectedsong as integer

  if songlist.listcount>0 then 'If there are any songs in the list

    playing=true

    if songlist.listindex=-1 then 'If no song is selected
      songlist.selected(0)=true ' select  the first song
    else
      selectedsong=songlist.listindex 'store the selected song
      songlist.selected(selectedsong)=false
      songlist.selected(selectedsong)=true 'flip the selection
    end if
  end if
End Sub
```

THIS SCRIPT STARTS the player. The single quote tells REALbasic to ignore any characters following it, so you can add comments to your code.

2 Make the List Smarter

Next, you'll want SongList to play the appropriate song if its selection changes while the player is running. Double-click SongList, then click on the Change item if you haven't already selected it. Change runs each time the selection changes. Enter the following script.



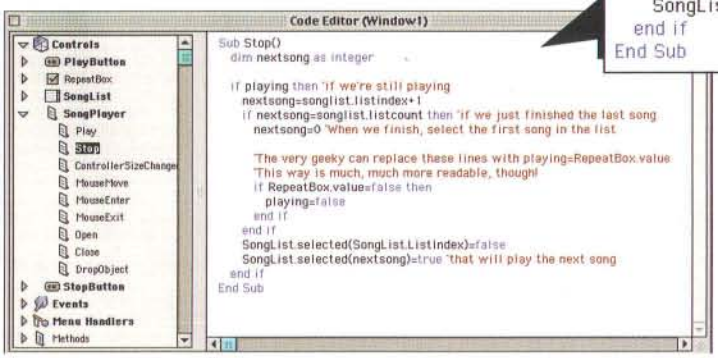
NOW THAT THE PLAYER CAN PLAY, this script will start songs as soon as the selection changes.

3 Changing Songs

To complete your program's playing functions, you need to tell it to advance to the next song when one ends. When you reach the end of the list, see if RepeatBox is checked; if it is, you should start again at the beginning of the list. Otherwise, you should set playing to False to turn off the player.

To implement this, double-click the SongPlayer (the gray rectangle at the bottom of the window). Click Stop in the panel at the left of the Code Editor, then enter the following script.

```
Sub Stop()
  dim nextsong as integer

  if playing then 'if we're still playing
    nextsong=songlist.listindex+1
    if nextsong=songlist.listcount then 'if we just finished the last song
      nextsong=0 'When we finish, select the first song in the list

      'The very geeky can replace these lines with playing=RepeatBox.value
      'This way is much, much more readable, though!
      if RepeatBox.value=false then
        playing=false
      end if
    end if
    SongList.selected(SongList.ListIndex)=false
    SongList.selected(nextsong)=true 'that will play the next song
  end if
End Sub
```

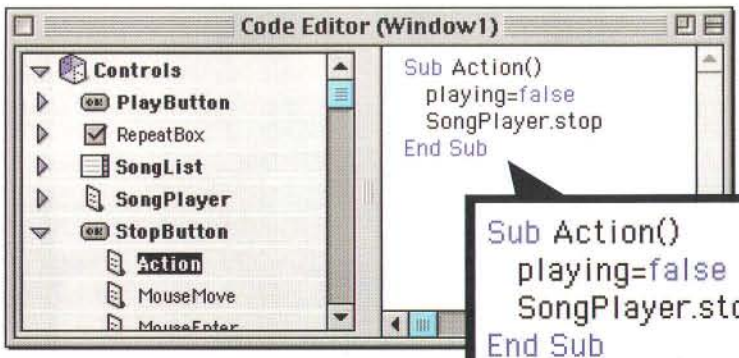


WHEN A SONG STOPS, the player should move on to the next song.

4 The Stop Button

As a grand finale, implement the Stop button. This one's very easy—it just stops the current song and sets Playing to False. Double-click the Stop button, then enter the following script. Finally, create the finishined program: Select Build Application from the file menu, set Suggested Size to a reasonable value (say, 1000), name the program, and click Build!

YOU MUST ENTER the lines in the order shown, or the next song will start as soon as you click Stop!



Ian Sammis is really hoping that the iBorg will be up and running by the time you read this.

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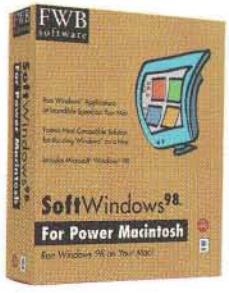

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ask us

Nothin' but a Texan flexin' tech questions in this section.

Questions?

Submit technical questions or helpful tips directly via email (askus@macaddict.com) or c/o MacAddict, *150 North Hill Dr., Brisbane, CA 94005.*

FIND TEX-EDIT PLUS 2.9, Sherlock II Window Fixer 1.0.1, and Coaster 1.0.6 on The Disc.

HAVE DIFFERENT ANSWERS for these questions? Share your ideas at http://www.macaddict.com/debate.

Q It has come to my attention that some older browsers present an error message stating they have an expired certificate. This message appears on Web sites that use security encryption. This started happening after January 1, 2000—I thought Macs were immune to Y2K problems! I found out that you have to use the newest browser software to solve this problem—but the latest versions of Netscape and Internet Explorer won't run on my old 680X0 Performa. Am I stuck, or is there some way I can use secure sites?

A The vendors that provide security certificates for Web sites arbitrarily chose December 31, 1999, as the date on which security certificate software would expire, requiring users to have browsers that support newer security certificate standards. Any browser on any platform without updated software ceased working on these sites at that time. The upshot is that browsers older than version 4.08 of Netscape Navigator and 4.51 of Internet Explorer will not work on secure sites. Complicating matters, the newest versions of these browsers (Netscape 4.7 and Explorer 4.51—with IE5 due out soon) only work on Macs with PowerPC processors.

Fortunately, one version of Netscape Navigator still supports the new security certificates and runs on older Macs—the 680X0 version of Navigator 4.08. You'll find it on the Web at http://home.netscape. com /download. As for Internet Explorer, you are out of luck. Microsoft has dropped *all* support for 680X0 Macs and has removed all old versions from its Web pages. In fact, Microsoft's only solution is for you to buy a new computer! Read the whole story at http://www.microsoft.com /mac/download/en/IE401info.htm.

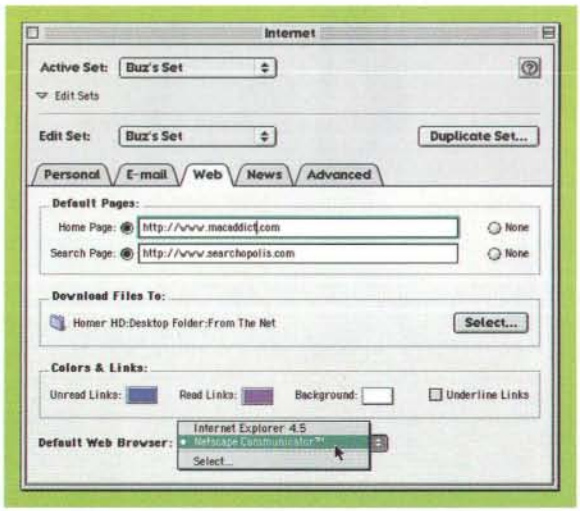
BEFORE AND AFTER applying Raul's Sherlock II Window Fixer: a whole old look!

Q When I search the Internet using Sherlock, the links open in Internet Explorer. How do I get them to open with Netscape? Plus, how can I get rid of the fancy brushed-aluminum look in Sherlock 2? I do a lot of searching with Sherlock and would love to have the ability to collapse the Sherlock window.

A When it opens Web pages, Sherlock uses whatever browser you have selected in the Internet control panel. To choose a different default browser, open this control panel and click the Web tab. A pop-up menu at the bottom lets you change the default Web browser.

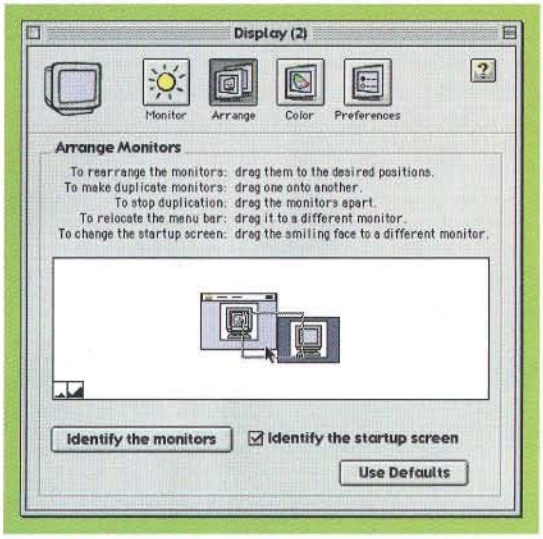
As for the look of the Sherlock 2 window, just as many people like it as dislike it. We happen to dislike it, and have found a great utility to put it back the way it should be. Called the Sherlock II Window Fixer 1.0 (http://www.teamdraw.com/raul/stuff), it strips the brushed-aluminum look out and even allows you to use the collapse box just as in a regular window.

Q I have a computer equipped with two video cards, enabling me to use two monitors. I would like to have one screen mirror the other instead of forming a single, wider desktop. I remember a control strip module that used to do this, but I can't find it now. How do I tell my computer to create a mirror image so that both screens look the same?



SET IT AND FORGET IT—let your system know what browser to use.

A Oh, how we Mac users adore having multiple monitors connected to our computers. This, of course, is because Macs have had this ability for years and years, long before the Wintel mainstream acquired such prowess with Windows 98 (Windows NT doesn't count). Connecting more than one monitor to a Mac simply requires installing



DRAG ONE ICON ON TOP of the other—and there it is, instant video mirroring.

a second or third video card, then plugging in the monitors.

The fun in this arrangement comes when you configure them. Using the Monitors And Sound or Monitors control panel, you can line them all up so they create one desktop spanning all monitors and the cursor actually moves from screen to screen. The Monitors control panel provides a simple, graphical way to configure your setup. Just drag the monitors around until you have them set up like your real configuration.

As for mirroring, just drag one screen icon on top of the other. The Mac OS also installs a control strip module called Video Mirroring that lets you switch to mirroring on the fly. You may not find this control panel installed on some older computers, but a custom install from your system disc should locate it.

Q I find many MIDI sound files on the Internet, and when I click them, they play in the browser window. I would like to save these files for use when I make multimedia presentations, but I can't figure out how. What am I doing wrong?

A You aren't doing anything wrong—your browser is functioning as configured. You have to tell Web browser software what to do with certain files when it encounters them—for example, to display a text file and to download a StuffIt archive. The browser recognizes what kind of file it's dealing with by examining the MIME type, a signature assigned to a file based on its suffix.

In the case of MIDI files, the default setting tells your browser to view these files in the window using the QuickTime plug-in. To change this behavior, open Netscape's Preferences from the Edit menu and select the Applications choice on the left. Find the entry for MIDI and click the Edit button. Change the button to Save To Disk, and when you click a MIDI file it will now download instead of playing. A simpler solution is to hold down the Option key while clicking a MIDI link; you then get a prompt for a location in which to save the file.

Q I didn't order an audiovisual input card with my 300MHz G3 a couple of years ago, and now a dilemma confronts me: How can I record songs in my extensive record collection from the stereo system to the hard drive? What is the best solution? Apple does not sell AV cards separately.

A You don't need fancy input cards to capture high-quality sound on your Mac. The 1/8-inch stereo plug on your computer will suit the purpose just fine. Any audio capture software, such as the freeware program Coaster (http://www.in.tum.de/~rothc/coaster.html), can recognize and use this input. You may need some extra hardware to connect the phonograph or stereo to the computer. Your stereo equipment uses two RCA plugs (left and right, usually red and white) to connect the components together. To connect them to your computer, you need an adapter that converts from stereo RCA to the stereo 1/8-inch plug on your Mac. You'll find it at any stereo store or electronics outlet, such as Radio Shack. Additionally, you may need a phono preamp (also sold at Radio Shack) if you want to plug in a turntable directly. (See "Multitrack with Your Mac," DEC/99, p98 for more information.)

Q Do IDE cards for PCI Macs exist? If they do, where can I find one? I'm hungry for storage, my 4.5GB SCSI is almost full, and IDE drives are so inexpensive these days!

A Yes, there is such a card, called the TurboMax—and ProMax sells it (http://www.promax.com). This PCI card enables PCI Power Macs to take advantage of the amazing deals on IDE hard drives. The TurboMax provides an internal connection for any UltraDMA EIDE/ATA hard disk. This wonderful card also allows you to stripe IDE drives and create a superfast RAID setup.

Q Someone told me my old Quadra 605 computer needs a new battery, but I don't know where to get one.

A Apple service centers are your best bet, since they can order the part directly from Apple and install it for you. However, there are alternatives for this common Mac component. The battery itself is a 1/2 AA 3.6-to-3.9-volt LiIon, and its main purpose is to power a chip on the logic board. When you turn off your computer, this chip maintains certain settings, such as time. Apple maintains a list of substitute batteries from other manufacturers—you can probably track them down at Radio Shack or other electronics stores. The substitute batteries are, by name and part number, the Hitachi Maxell (ER3S), Electrochem (3B26), Eternacell (T04/41), Tadiran (TL-2150, TL-5101), and Varta (VL1/2AA).

You may not be able to find them by brand name, but you will certainly be able to find them by part number. For more information, check Apple's tech info library (http://til.info.apple.com), article number 14768.

Buz Zoller is a technology support specialist for a school district in Texas.

Footnotes...

In the February *Ask Us* column, we discussed how to add a graphic to a SimpleText document. The tricky ResEdit method we described is not the easiest way. Tom Bender has created a wonderful piece of software called Tex-Edit Plus (http://www.nearside.com/trans-tex). This amazing piece of shareware lets you copy and paste graphics into a SimpleText document. Great work, Tom!

Also in February, we mentioned that DoubleScroll by Ed Voas isn't compatible with Mac OS 8 or later. Many readers responded that they were using a version that does work with OS 8 or later. The truth is that for a very short time, Ed released an OS 8-compatible beta version of DoubleScroll. He later withdrew this version and still hasn't made it available. You'll find the whole story on his DoubleScroll Web site (http://www.amargosa.com/doublescroll.html).

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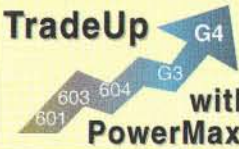

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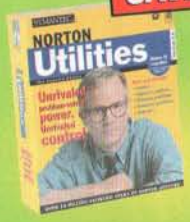

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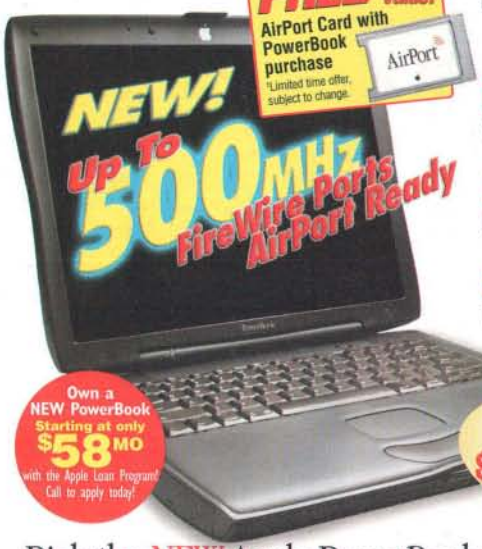

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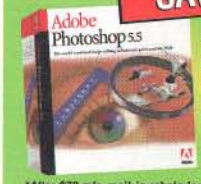
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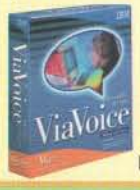

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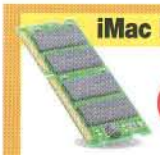

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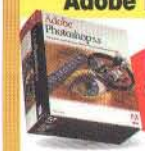

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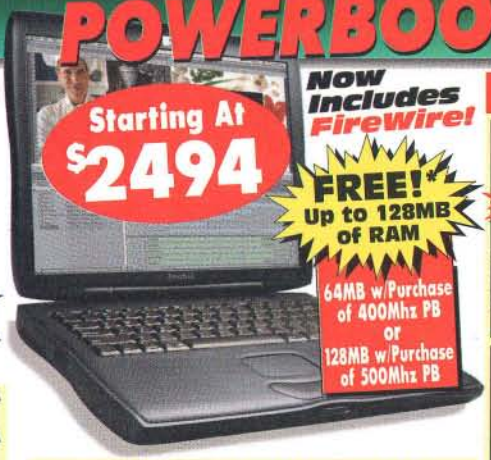

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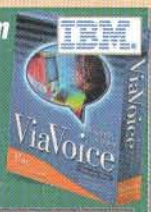

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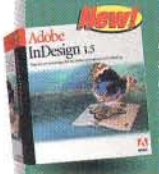

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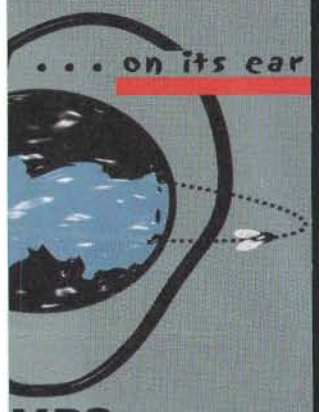

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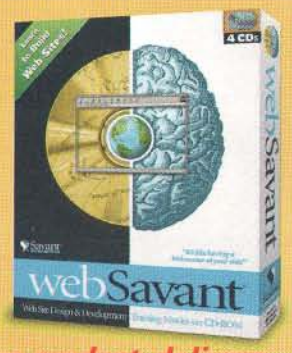

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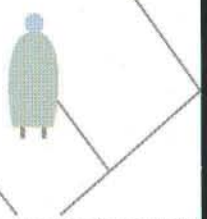

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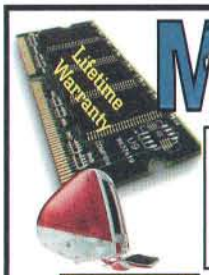

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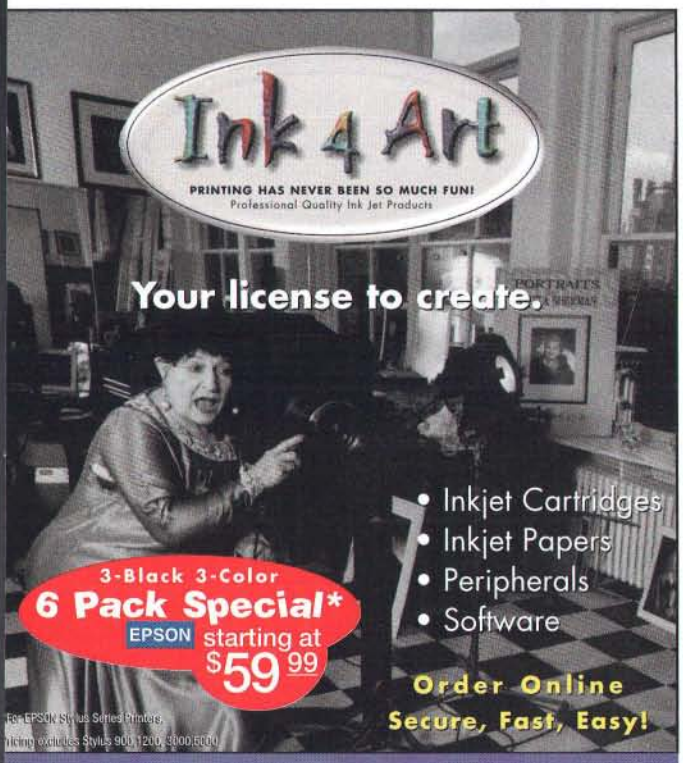

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Where Janet Reno goes to get her monthly guffaws!

Separated at Birth

In a juxtaposition so striking that you just have to wonder if these two share common DNA, Apple co-founder Steve Wozniak and famed director Francis Ford Coppola look as though they should be sitting at the same Thanksgiving table.

Coppola: known for realistic movies.

Wozniak: known for fake IDs.

News Stories We Thought We Read Somewhere...

To bring itself into compliance with the Motion Picture Association of America's revised movie rating system, Mac OS X is being renamed Mac OS NC-17. However, Apple was characterized as reluctant to remove the gratuitous desktop picture in which Ricky Martin is knifed in the shower to obtain a Mac OS R rating.

In an effort to make system software names more accurately reflect their functions, Apple has given Software Update a new name: CrashNow. This is the latest in a trend that includes Norton CrashCauser and Norton FileHoser (formerly known as Norton CrashGuard and Norton FileSaver, respectively).

While trying to gorge itself on yet another corporate merger, AOL choked on the proposed Time Warner-EMI merger like a chicken bone, and after a collective Heimlich maneuver performed by disgruntled but helpful Netscape employees, the company coughed up the offending music company on federal regulators.

MacAddict Corrections

[+] Last month when we listed the ten most influential people at *MacAddict*, we forgot to mention the following people. We regret the error.

- Cathy Lu
- Robert Capps
- David Reynolds
- Peewee
- Narasu Rebbapragada
- David Ross
- Ian Sammis
- Jenifer Morgan
- Rich Pizor
- Niko Coucouvanis

[+] While surfing the Internet, we ran aground on an outmoded mid-1990s metaphor for networking. We're terribly sorry.

[+] On page 227 of the March issue, we meant to make fun of Microsoft, but then we realized we'd already spent most of 1997 doing that. We also meant to make fun of The Gap, but we decided that it does that well enough itself. We feel really, really bad.

It's a Stick That Holds Stuff, Get It?

MacAddict obtained a confidential document from Sony that details alternative names considered and rejected for the Sony Memory Stick.

- RAM Rod
- Memory Mace
- Bit Bat
- What's That Thing Called Again?
- Silicon-That-Holds-Data Shoot

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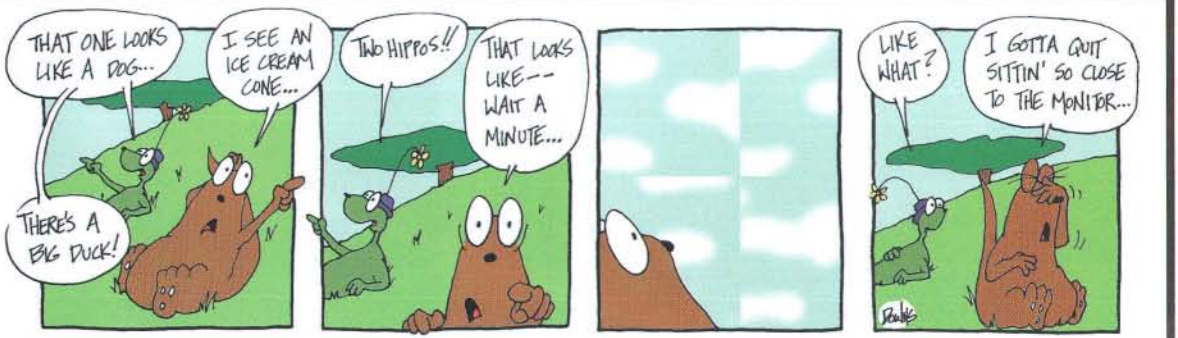
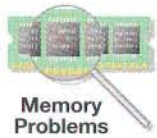


Visit the Fitzpatrick archive at http://www.insanely-great.com/comic/index.html.

BY CHUCK DOWNS

The Seven Deadly Macintosh Sins:

Software Conflicts



Memory Problems

Viruses

Hardware Problems

Network Problems

Disk Damage

Damaged Software

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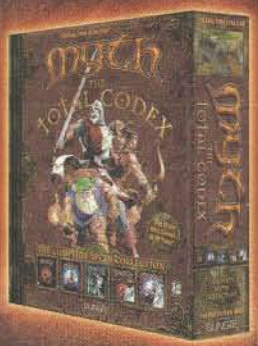

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